Nakamichi®

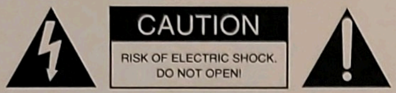
AV-8

Audio/Video Receiver

Owner's Manual

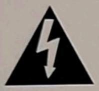
WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

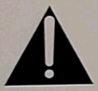

CAUTION
RISK OF ELECTRIC SHOCK. DO NOT OPEN!

CAUTION

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure; that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

WARNING

The Federal Communications Commission does not allow any modifications or changes to the unit EXCEPT as that specified by Nakamichi in this manual. Failure to comply with this government regulation could void your authority to operate the equipment.

This digital apparatus does not exceed the CLASS B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Please record the serial number in the space provided below and retain this number. The serial number is located on the rear panel of the unit.

Model Number : AV-8 ______________________
Serial Number : ______________________

Important Notice

This is applicable to sales outside the European Community.

We thank you for your purchase of this Nakamichi product and trust that it will provide you with many years of trouble-free performance. Should you be using your Nakamichi product in a country other than the one in which it was originally purchased, we ask you note the following:

1. The appointed Nakamichi distributor for any given country is responsible for warranty servicing only on units distributed by or through it in that country in accordance with its applicable warranty.

2. Should a Nakamichi product require servicing in a country other than the one in which it was originally purchased, the end user may seek to have repairs performed by the nearest Nakamichi distributor, subject to that distributor's local servicing policies, but all costs of repair (parts, labor, transportation) must be born by the owner of the Nakamichi product.

Thank you again for your purchase.

Nakamichi Corporation
Tokyo, Japan

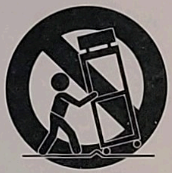
Contents

Safety Instructions 4
Usage Precautions 6
External View 8
Connections 9
Settings 18
Basic Operation 24
FM/AM Broadcast Reception 26
Program Source Playback 28
Recording 34
Use of the Remote Control 36
Troubleshooting 40
Specifications 41

Safety Instructions

The following safety instructions have been included in compliance with safety standard regulations. Please read them carefully.

1. Read Instructions - All the safety and operating instructions should be read before the appliance is operated.
2. Retain Instructions - The safety and operating instructions should be retained for future reference.
3. Heed Warnings - Adhere to all warnings on the appliance and in the operating instructions.
4. Follow Instructions - All operating and use instructions should be followed.
5. Water and Moisture - The appliance should not be used near water - for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.
6. Carts and Stands - The appliance should be used only with a cart or stand that is recommended by the manufacturer.
7. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.



8. Wall or Ceiling Mounting - The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
9. Ventilation - The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug or similar surface that may block the ventilation openings; or placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
10. Heat - The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliance (including amplifier) which produce heat.
11. Power Sources - The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
12. Grounding or Polarization - Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.
13. Power-Cord Protection - Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
14. Cleaning - The appliance should be cleaned only as recommended away from power lines.
15. Power-Lines - An outdoor antenna should be located away from power lines.
16. Outdoor Antenna Grounding - If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna-discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See the next page.
17. Nonuse Periods - The power Cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
18. Object and Liquid Entry - Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

19. Damage Requiring Service - The appliance should be serviced by qualified service personnel when:
    - A. The power-supply cord or the plug has been damaged; or,
    - B. Objects have been fallen, or liquid has been spilled into the appliance; or,
    - C. The appliance has been exposed to rain; or,
    - D. The appliance does not appear to operate normally or exhibits a marked change in performance; or,
    - E. The appliance has been dropped, or the enclosure damaged.
20. Servicing - The user should not attempt to service the appliance beyond that described in the operating instruction. All other servicing should be referred to qualified service personnel.

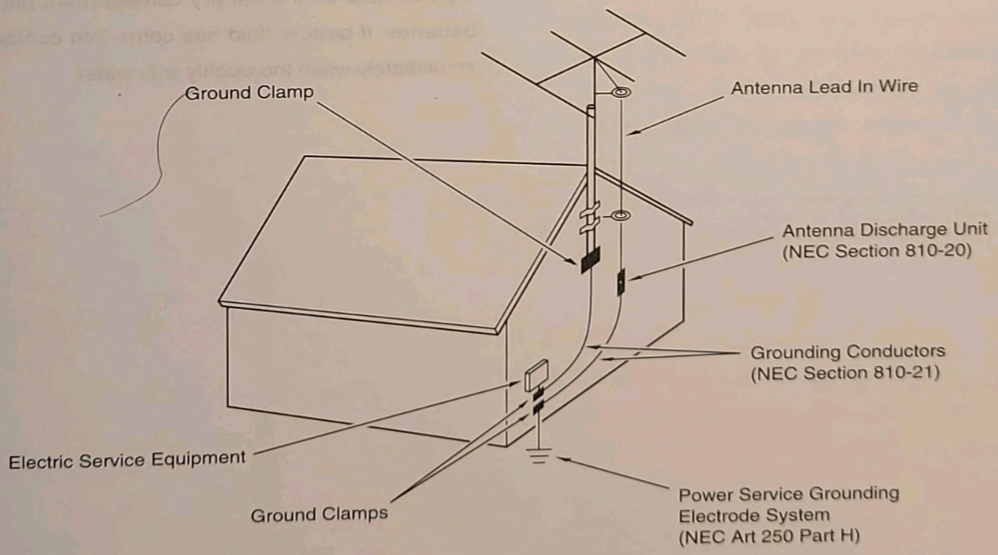
Caring for the Exterior Panels

Caring for the exterior panels of the unit should be limited to wiping with a soft dry cloth. Avoid using solvents or alcohol-based cleaners.

Note to CATV system installer

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

EXAMPLE OF ANTENNA GROUNDING ACCORDING TO NATIONAL ELECTRICAL CODE


Ground Clamp
Antenna Lead In Wire
Antenna Discharge Unit
(NEC Section 810-20)
Grounding Conductors
(NEC Section 810-21)
Electric Service Equipment
Ground Clamps
Power Service Grounding
Electrode System
(NEC Art 250 Part H)

NEC - National Electrical Code

Usage Precautions

Labels for operation

This unit can be operated from the main unit or from the remote control. The labels below indicate which functions can be operated from where.

MAIN/RC	Can be operated from main unit or remote control.
MAIN	Can be operated from main unit.
RC	Can be operated from remote control.

About the batteries

- Do not charge the batteries. Attempting to charge regular (non-rechargeable) batteries may cause fluid leakage or cause the batteries to explode, involving the risk of fire and injury.
- When inserting the batteries in the remote control, pay attention to proper +/- polarity as indicated in the battery compartment. Inserting batteries with wrong polarity may cause fluid leakage or cause the batteries to explode, involving the risk of fire, injury, or contamination.
- Do not use batteries other than indicated in this manual. Do not use a mixture of old and new batteries. Failure to observe this precaution may cause fluid leakage or cause the batteries to explode, involving the risk of fire, injury, or contamination.
- Do not expose batteries to heat or try to dismantle them. Do not throw batteries into fire or water. Failure to observe this precaution may cause fluid leakage or cause the batteries to explode, involving the risk of fire, injury, or contamination.
- Remove the batteries when not using the unit for a long time. Failure to observe this precaution may cause fluid leakage or cause the batteries to explode, involving the risk of fire, injury, or contamination. If fluid leakage has occurred, carefully wipe all fluid off the battery compartment and insert new batteries. If battery fluid has come into contact with skin, immediately wash thoroughly with water.

About remote control

Do not expose the remote control to direct sunlight or high temperatures. Failure to observe this precaution may cause deformation of the case.

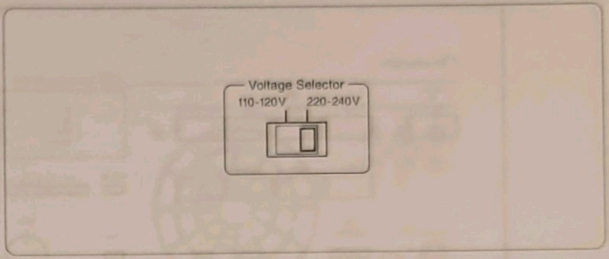
Cleaning

Clean the unit only by wiping it with a soft cloth. Never use any solvents, cleaning alcohol or chemical cleaners, since these may damage the finish and labelling, and lead to discoloration and deformation.

Packing material

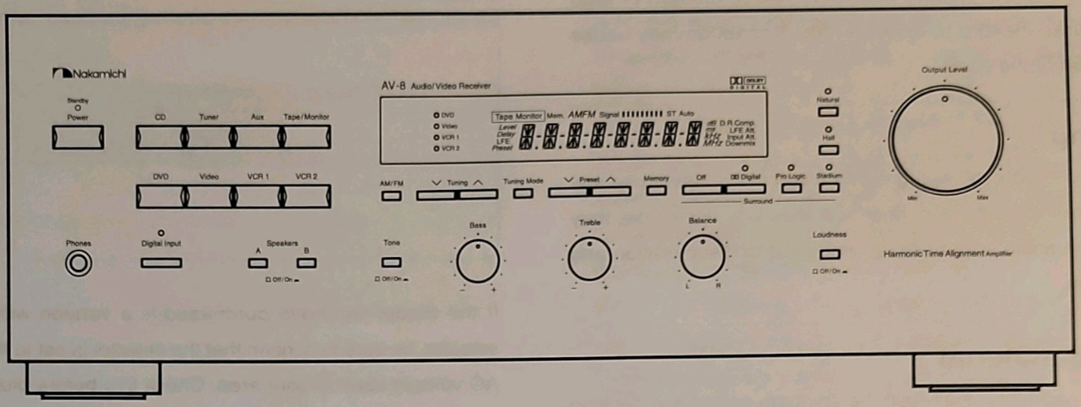
We recommend that you retain the shipping carton and packing material of the unit, since these will be useful for renewed transport.

Voltage selector



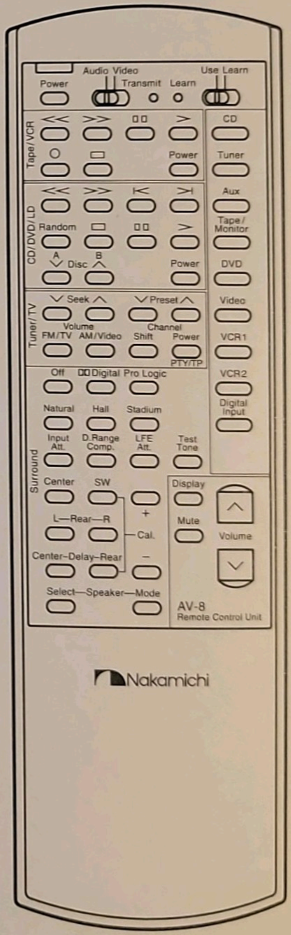
If the model you have purchased is a version with voltage selector, be sure to confirm that the selector is set to the correct AC voltage used in your area. Check this before plugging the power cord into the AC outlet. If the selector is not set correctly, change the setting so that it matches your local AC voltage rating.

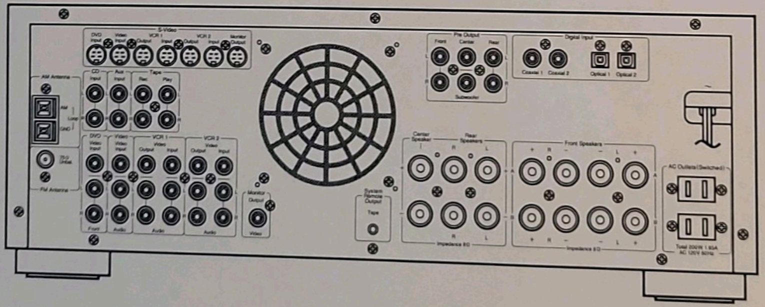
External View


Nakamichi
Standby
Power
CD
Tuner
Aux
Tape/Monitor
DVD
Video
VCR 1
VCR 2
Phones
Digital Input
Speakers
A
B
☐ Off / On ▬
AV-8 Audio/Video Receiver
DOLBY DIGITAL
DVD
Video
VCR 1
VCR 2
Tape Monitor
Mem.
AMFM
Signal
ST
Auto
Level
Delay
LFE
Preset
dB
ms
kHz
MHz
D.R.Comp.
LFE Att.
Input Att.
Downmix
AM/FM
Tuning
Tuning Mode
Preset
Memory
Off
DD Digital
Pro Logic
Stadium
Hall
Natural
Surround
Tone
☐ Off / On ▬
Bass
Treble
Balance
L
R
Loudness
☐ Off / On ▬
Output Level
Min
Max
Harmonic Time Alignment Amplifier

Front panel

Remote control


Power
Audio Video
Transmit
Learn
Use Learn
Tape/VCR
<<
>>
▯▯
>
○
▭
Power
CD
Tuner
CD/DVD/LD
<<
>>
|<
>|
Random
▭
▯▯
>
A
B
Disc
Power
Aux
Tape / Monitor
DVD
Tuner/TV
Seek
Preset
Volume
Channel
FM/TV
AM/Video
Shift
Power
PTY/TP
Video
VCR1
VCR2
Digital Input
Surround
Off
DD Digital
Pro Logic
Natural
Hall
Stadium
Input Att.
D.Range Comp.
LFE Att.
Test Tone
Center
SW
+
L—Rear—R
Cal.
Center–Delay–Rear
–
Select—Speaker—Mode
Display
Mute
Volume
AV-8
Remote Control Unit
Nakamichi


S-Video
DVD Input
Video Input
VCR 1
Output
Input
VCR 2
Output
Input
Monitor Output
AM Antenna
AM
Loop
GND
75 Ω UNBAL
FM Antenna
CD
Input
Aux
Input
Tape
Rec
Play
DVD
Video Input
Video
Video Input
VCR 1
Video
Output
Input
VCR 2
Video
Output
Input
Front
Audio
Audio
Audio
Monitor
Output
Video
Pre Output
Front
Center
Rear
Subwoofer
Digital Input
Coaxial 1
Coaxial 2
Optical 1
Optical 2
System Remote Output
Tape
Center Speaker
Rear Speakers
R
L
Impedance 8 Ω
Front Speakers
+
R
–
L
A
B
Impedance 8 Ω
AC Outlets (Switched)
Total 200W 1.65A
AC 120V 60Hz

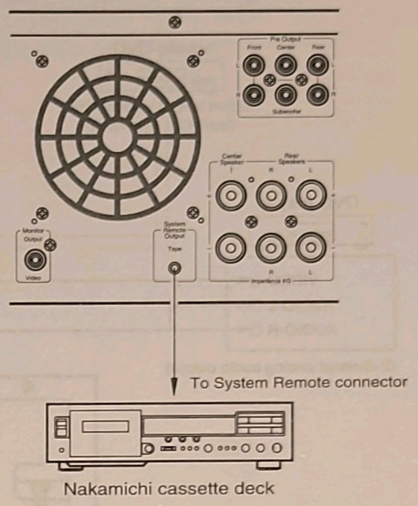
Rear panel

Connections

Precautions

- Disconnect the power cords of this unit and all other components from the AC outlets before making any connections.
- Do not insert any shorting plugs or unconnected cables into unused connectors. Otherwise the sound may be cut off and short-circuiting may occur.

System remote connection


Pre Output
Front
Center
Rear
L
R
Subwoofer
Center Speaker
Rear Speakers
R
L
Impedance 8Ω
Monitor Output
Video
System Remote Output
Tape
To System Remote connector
Nakamichi cassette deck

Controlling a Nakamichi cassette deck

Use the supplied system remote cable to connect the "System Remote Output -Tape" connector on the AV-8 to the System Remote connector on the Nakamichi cassette deck. This allows operating the cassette deck with the remote control of the AV-8.

- If the Nakamichi cassette deck has a Tape 1/2 selector on the rear panel, set it to "Tape 1".
- Nakamichi cassette decks whose System Remote connector is not a 3.5-mm mini phone jack cannot be connected for operation with the remote control of the AV-8.

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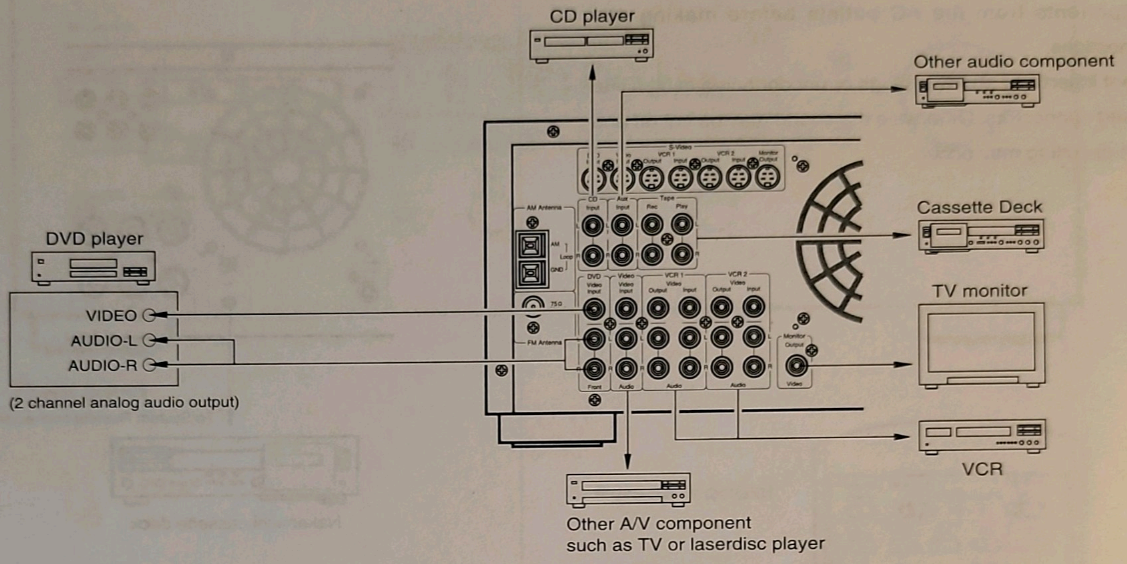
Controlling a Nakamichi CD player

No special connection is necessary. A Nakamichi CD player can be operated directly using the remote control of the AV-8.

Connections to other equipment


CD player
Other audio component
Cassette Deck
TV monitor
DVD player
VIDEO
AUDIO-L
AUDIO-R
(2 channel analog audio output)
VCR
Other A/V component
such as TV or laserdisc player

- For the terminal on this unit, the yellow terminal is the video (coaxial) terminal, the white terminal is the left channel analog audio terminal, the red terminal is the right channel audio analog terminal, and the orange terminal is the digital audio (coaxial) terminal.
- When connecting A/V equipment to this unit, be sure to use only high-quality video cables. Use of ordinary cables not designed for video applications may lead to impedance mismatching and picture loss.

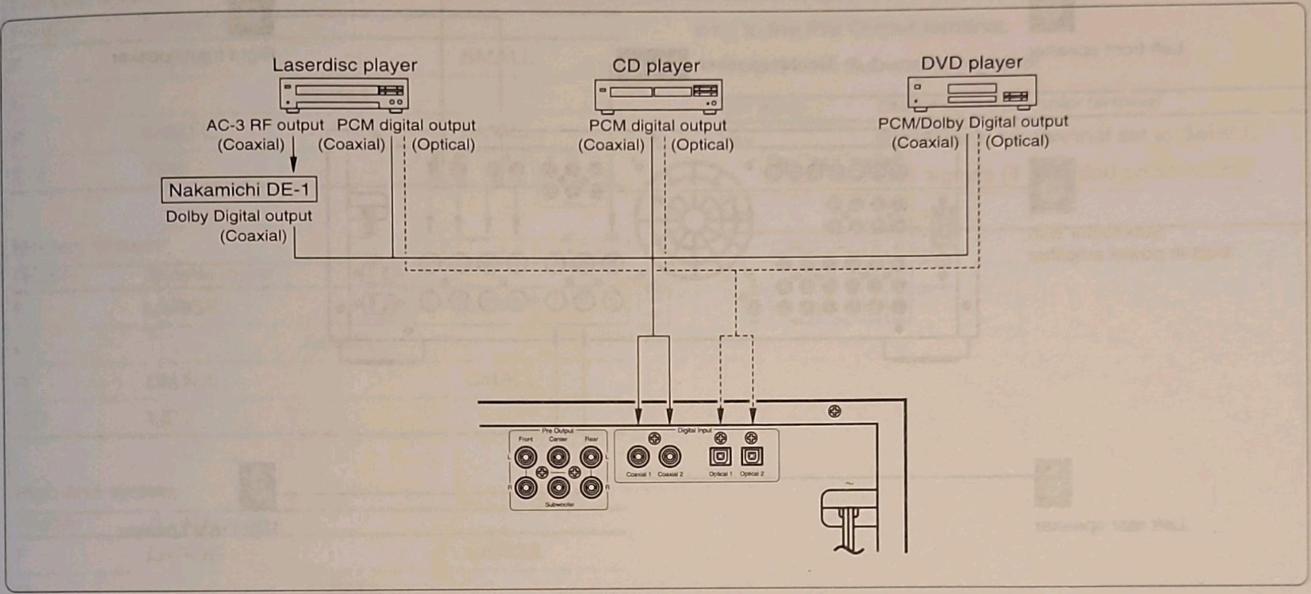
Video/S-video terminals

- The video signals input to the Video (coaxial) terminal cannot be output from the S-Video terminal and the video signals input to the S-Video terminal cannot be output from the Video terminal.
- When both Video and S-Video type video signals are connected to the monitor, please select which signal to use with the input selector on the monitor.

Input signals required for surround playback

Surround mode	*Necessary input signals*
Dolby Digital	Dolby Digital signals
Pro Logic/Natural/Hall/Stadium/Off	PCM digital signals or analog signals

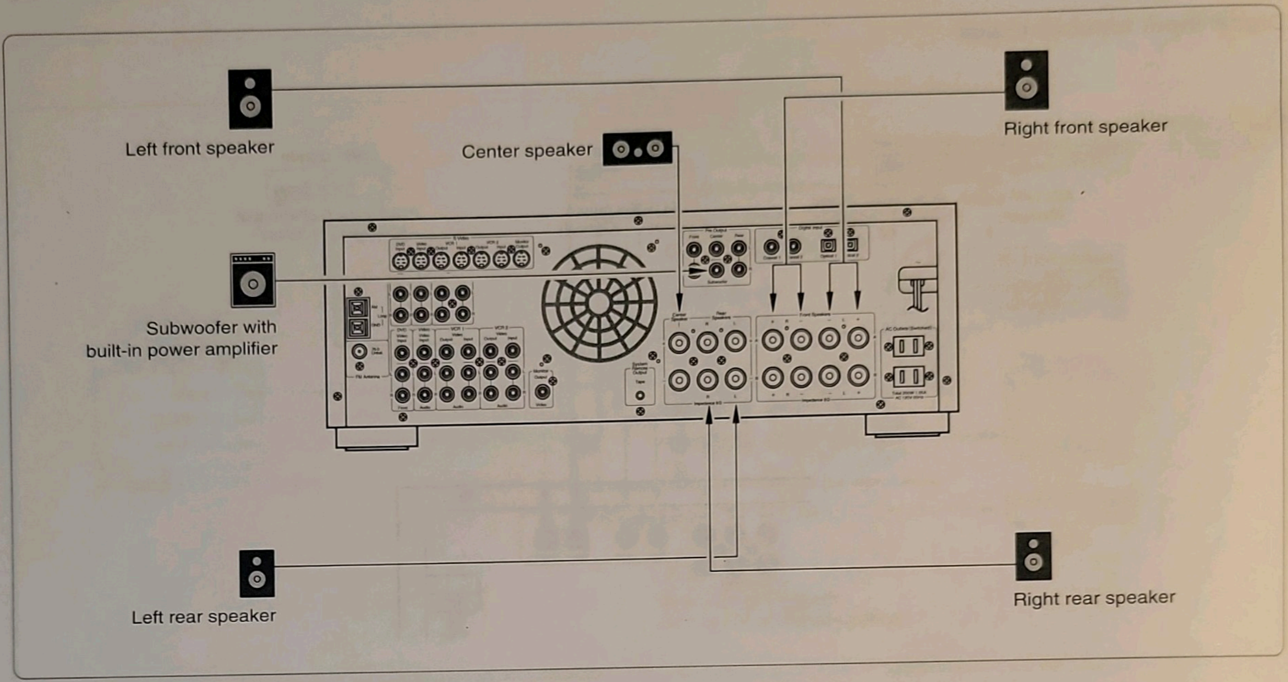
Digital input terminal usage


Laserdisc player
CD player
DVD player
AC-3 RF output (Coaxial)
PCM digital output (Coaxial) (Optical)
PCM digital output (Coaxial) (Optical)
PCM/Dolby Digital output (Coaxial) (Optical)
Nakamichi DE-1
Dolby Digital output (Coaxial)
Pre Output
Front
Center
Rear
L
R
Subwoofer
Digital Input
Coaxial 1
Coaxial 2
Optical 1
Optical 2

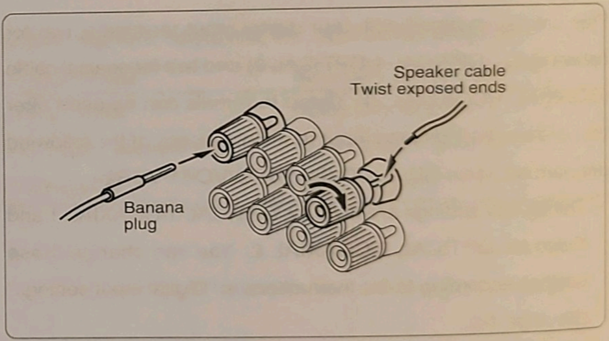
This unit is equipped with four digital input terminals, two for optical cable (OPTICAL 1/OPTICAL 2) and two for coaxial cable (COAXIAL 1/COAXIAL 2). These terminals can be used after they are set as dedicated input terminals for any of the following program sources: CD/Aux/DVD/VIDEO/VCR1/VCR2.

- The factory settings are DVD for OPTICAL 1/COAXIAL 1 and Video for OPTICAL 2/COAXIAL 2. You can change these settings according to the instructions in "Digital input settings" (on page 18).
- A tuner or tape program source cannot be used for the digital input terminal.
- To record source audio, connect analog signals.
- When playing back a Dolby Digital source on a laserdisc player, the laserdisc player with AC-3 RF output and the separately sold Nakamichi DE-1 (AC-3 RF demodulator) are required. The DE-1 converts the AC-3 RF signal output from the laserdisc player into Dolby Digital signals that can be used by this unit.

Speaker connections


Left front speaker
Center speaker
Right front speaker
Subwoofer with built-in power amplifier
Left rear speaker
Right rear speaker

- Connect red terminals to the speaker (+) terminals and black terminals to the speaker (-) terminals. If polarity is reversed in one channel, imaging will be unstable and the sound will be unnatural.
- Use high-quality, heavy-gauge speaker cable with low resistance, designed specially for audio applications.
- The speaker cables for both channels should be approximately equal in length, as a marked difference can result in improper left/right balance.
- This unit incorporates a high-output power amplifier. Use only speakers whose rated power handling capacity exceeds the maximum rated output of this unit.
- It is possible to connect two pairs of speakers to the two sets of Front Speaker outputs. In this case, the speaker selector of the receiver can be used to select the speakers.


Speaker cable
Twist exposed ends
Banana plug

Recommended speaker system

Compact system

Position	*Speaker mode*	
F	SMALL	SMALL
C	SMALL	
R	SMALL	SMALL
SW	YES	

Medium system

Position	*Speaker mode*	
F	LARGE	LARGE
C	SMALL	
R	SMALL	SMALL
SW	YES	

High-end system

Position	*Speaker mode*	
F	LARGE	LARGE
C	SMALL	
R	LARGE	LARGE
SW	YES	

The speaker mode settings are given on Page 19.

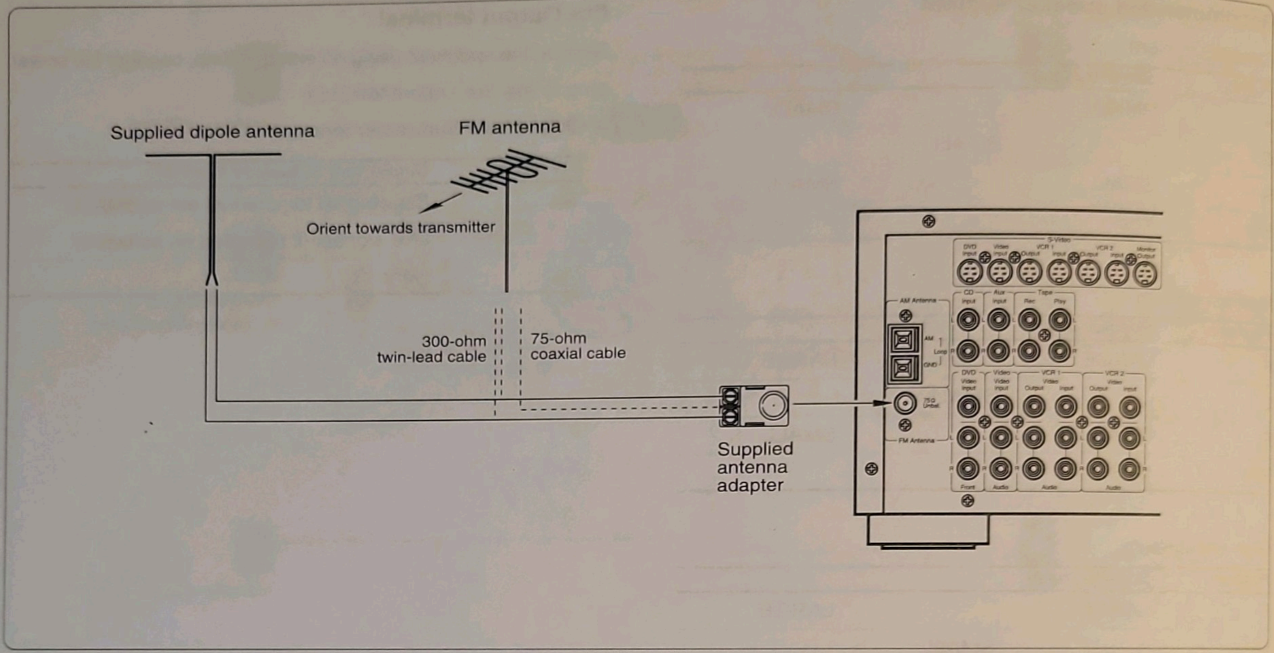
Pre Output terminal

To drive the speakers using an external amp, connect the power amp to the Pre Output terminal.

- Output from Subwoofer terminal

SW mode	*Output from Subwoofer terminal*
Yes	Bass signal for channel set to SMALL LFE signals (if recorded on software)
No	None

FM antenna connection



Areas in close proximity to strong stations

Extend the supplied 300-ohm twin-lead folded dipole and fix it to a wall or similar, in a position that yields best reception (highest number of signal strength indicators light up when receiving a desired station).

- Note that gain and directivity of the dipole antenna are low. Often multipath (reflections of broadcast signals by nearby buildings etc.) will occur, which degrades sound quality. Also, heavy traffic, railroads, or high-voltage power lines in the vicinity of the reception location may cause noise interference. Installation of a 3-element outdoor FM antenna is recommended in such cases.

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Fringe areas in considerable distance from stations, or urban areas with numerous high-rise buildings

Use an outdoor FM antenna with 5 to 8 elements.

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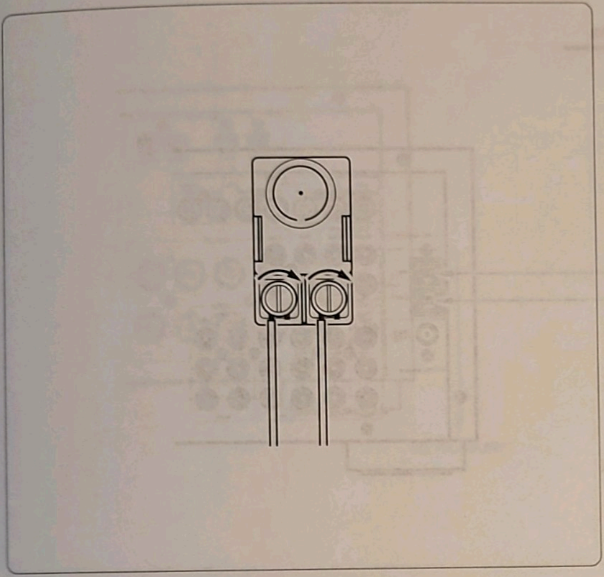
Areas with many noise or interference sources

Use shielded coaxial cable (5C-2V or 3C-2V) for the antenna connection.

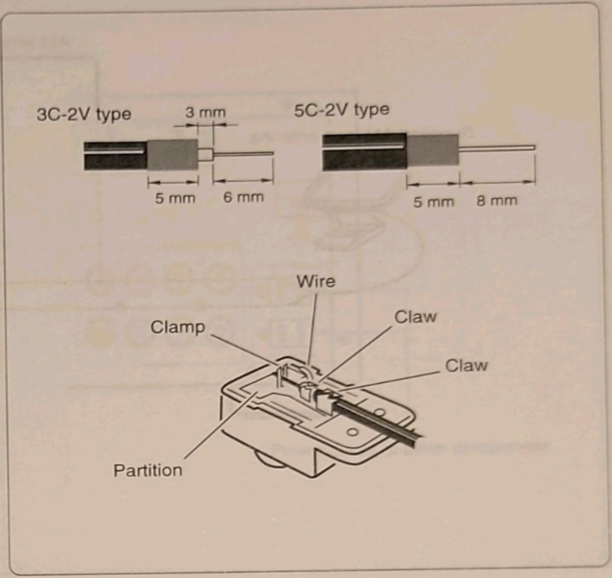
- A long antenna cable introduces signal loss and is prone to externally induced noise. For optimum performance, you should keep the connection as short as possible.
- Gain and directivity of a multi-element FM antenna increase with the number of elements (so-called directors). However, if a high-gain FM antenna is used in close proximity to a broadcast transmitter, input overload may occur, which will lead to increased distortion. In such cases, a commercially available attenuator should be inserted between the antenna and the receiver's antenna input.

Using 300-ohm twin-lead cable



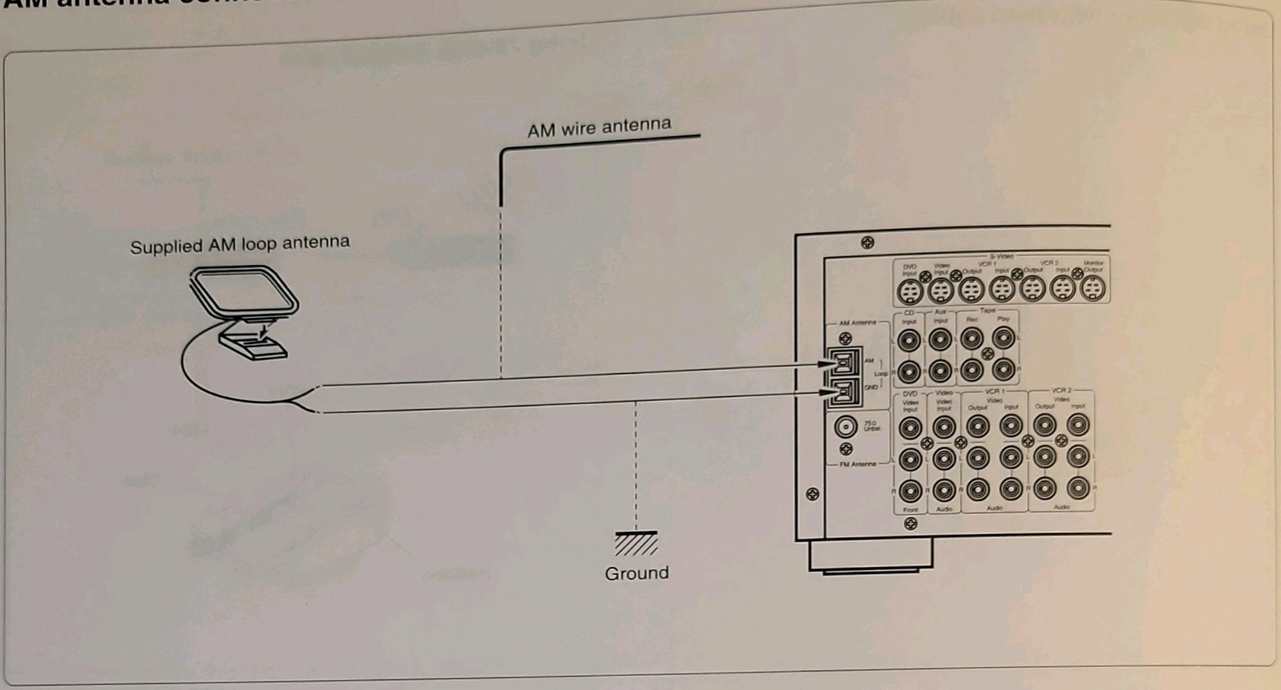
1. Connect the two leads of the cable to the screw terminals on the supplied antenna adapter.
2. Plug the adapter into the "75 Ω Unbal." connector on the receiver. Make sure that the adapter is pushed all the way in.

Using 75-ohm coaxial cable



1. Prepare the coaxial cable.
2. Release the lock of the supplied antenna adapter and pull the cover off.
3. Remove the wire from clamp and place it to the outside of partition.
4. Insert the center conductor of the coaxial cable into clamp.
5. Squeeze claws with the pliers to fasten the shield braid and insulation.
6. Replace the cover.
7. Plug the adapter into the "75 Ω Unbal." connector on the receiver. Make sure that the adapter is pushed all the way in.

AM antenna connection


AM wire antenna
Supplied AM loop antenna
Ground
S-Video
DVD Input
Video Input
VCR 1 Output
Input
VCR 2 Output
Input
Monitor Output
AM Antenna
AM
Loop
GND
CD Input
Aux Input
Tape Rec Play
L
R
75Ω Unbal.
FM Antenna
DVD Video Input
Video Video Input
VCR 1 Video Output Input
VCR 2 Video Output Input
Front
Audio
Audio
Audio

1. Assemble the supplied AM loop antenna.
2. Connect the cable from the loop antenna to the terminals marked “Loop”.
3. Orient the loop antenna so that the maximum number of signal-strength indicator segments lights up when receiving a desired station.

- If connected equipment is kept turned on during AM reception, noise interference may occur. In such a case, move the AM loop antenna and cable as far away as possible from the video connecting cables, or turn off the other equipment.
- If reception conditions with the supplied AM loop antenna are not satisfactory, extend an antenna wire (ordinary vinyl-coated lead wire) about 4 to 5 meters outdoors and connect one end of the wire to the AM antenna terminal marked “AM”. The loop antenna should remain connected also when using an outdoor antenna.

  CAUTION

  If an outdoor AM antenna is used, grounding must be provided for protection against lightning.

Ground connection

If the supplied AM loop antenna yields satisfactory reception, it is not necessary to provide a ground connection. If reception is noisy, try grounding the receiver as described below.

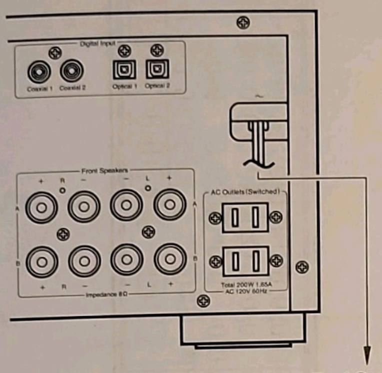
Establishing a ground connection

1. Provide a single-conductor wire (ordinary vinyl-coated lead wire) and connect one end of the wire to the AM antenna terminal marked “GND”.
2. Connect the other end of the wire to an earth ground, for example more than 50 cm length of exposed wire or a metal bar buried in the ground, or a water pipe (lead pipe) with complete grounding.

   CAUTION

   Never connect the ground wire to a gas pipe to avoid explosion hazard in case of a lightning strike.

AC power cord connection


Digital Input
Coaxial 1
Coaxial 2
Optical 1
Optical 2
~
Front Speakers
+
R
−
−
L
+
A
B
Impedance 8Ω
AC Outlets (Switched)
Total 200W 1.65A
AC 120V 60Hz
To AC outlet

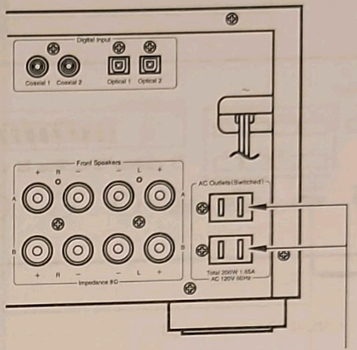
Plug the power cord into an AC outlet rated for the voltage shown on the rear panel of the unit.

- Do not plug in the power cord if the voltage shown on the rear panel of the unit and the AC line voltage in your area do not match.
- When the power cord is plugged into an AC outlet, the Standby indicator lights up and the unit can be turned on and off.

CAUTION
TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

CAUTION
Some internal circuits of the unit are powered continuously as long as the Standby indicator is lit. If the unit is not to be used for an extended period (such as during a prolonged absence), be sure to disconnect the power cord.

Convenience AC outlets

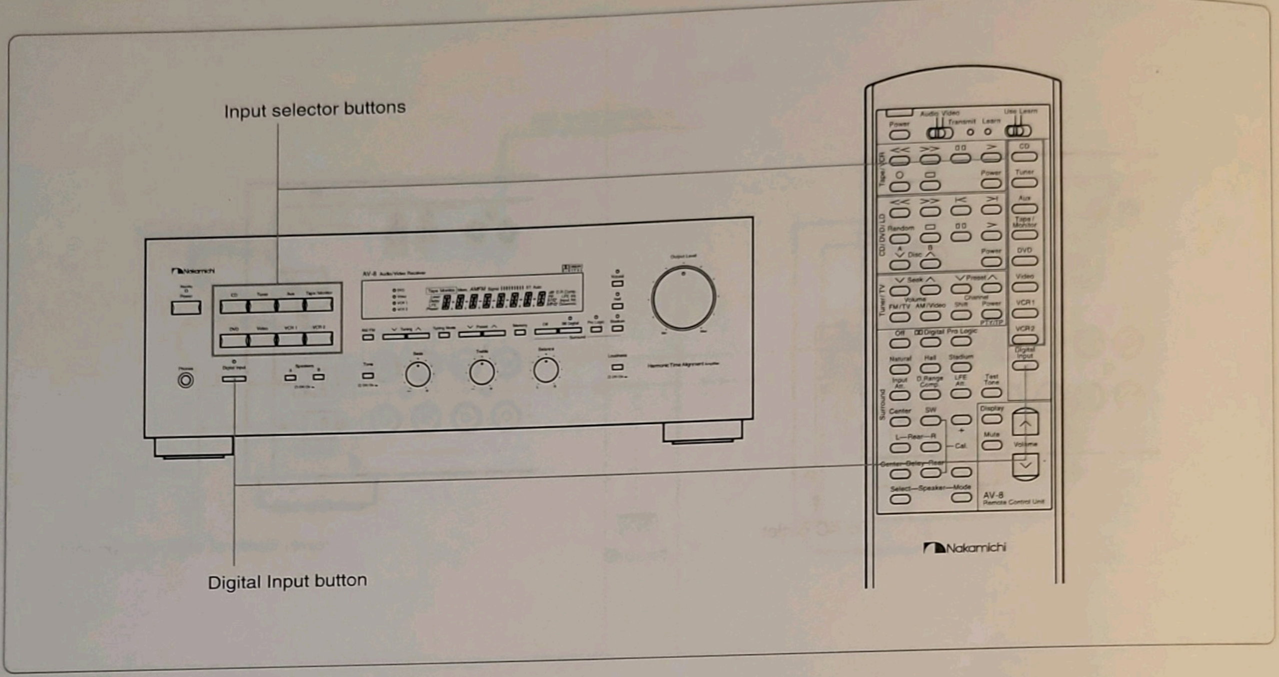

Digital Input
Coaxial 1
Coaxial 2
Optical 1
Optical 2
~
Front Speakers
Impedance 8Ω
AC Outlets (Switched)
Total 200W 1.65A
AC 120V 60Hz
Power cords of other component

By plugging other components into the switched AC outlets found on the rear of the AV-8, the equipment can be turned on and off in conjunction with the AV-8. It is also possible to connect more components than the number of outlets, using a power strip or similar. However, make sure that the combined AC power consumption rating of connected equipment does not exceed 200 watts.

- **Do not plug in any components rated for a different voltage than shown under the convenience AC outlets.**
- **Never connect any large TVs, video projectors, power amplifiers or other components with high power requirements and high inrush current when the power is turned on. Such equipment may overload the convenience AC outlets.**

Settings

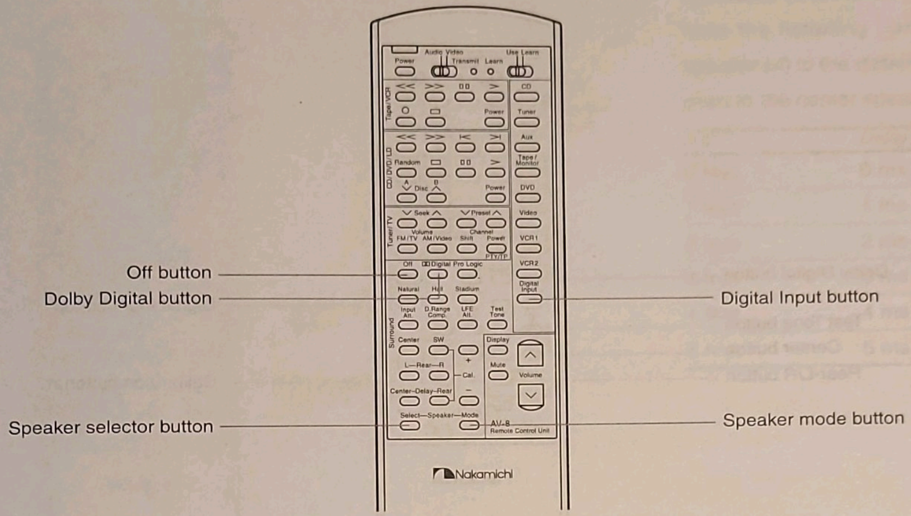
Digital input settings *MAIN/RC*



1. Select CD/Aux/DVD/Video/VCR1/VCR2 as program source with the input selector buttons on the receiver or the remote control.
2. Press the Digital Input button on the receiver or the remote control and hold it down for about two seconds. (The currently set digital input flashes. If nothing is set, "- - - - - - - -" flashes.)
3. Press the Digital Input button, then select the digital input to be set.
4. Press the Digital Input button and hold it down for about two seconds. (The selected digital input stops flashing and stays lit up and the setting is finalized.)
5. To set a second digital input, repeat steps 1-4.
6. To check the settings, select the programs with the input selector buttons, then press the Digital Input button.

- For digital input, you can set one optical terminal and one coaxial terminal for one program source. You cannot set two optical terminals (OPTICAL 1 and OPTICAL 2) or two coaxial terminals (COAXIAL 1 and COAXIAL 2).

Speaker mode setting *RC*



1. Press the Digital Input button on the receiver or the remote control to select digital input.
2. Press the Dolby Digital button on the receiver or the remote control to select a multi-channel mode.
3. Press the speaker selector button on the remote control to select the speakers used.
4. Press the speaker mode button on the remote control to select the speaker mode to use.

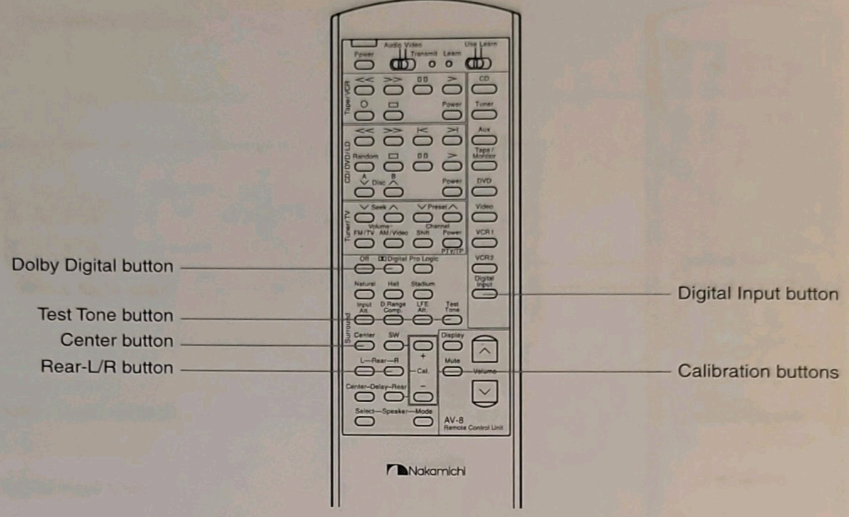
Speaker	*Speaker mode*
F (front)	LARGE/SMALL
C (center)	LARGE/SMALL/NONE
R (rear)	LARGE/SMALL/NONE
SW (subwoofer)	YES/NO

- LARGE (Speaker that can reproduce entire sound region)
- SMALL (Speaker that cannot reproduce bass region below 80 Hz)
- YES (Yes)
- NONE/NO (None)

5. Repeat steps 3-4 to set the modes for all the speakers.
6. To check the contents of the settings, press the speaker selector button.

- When F (front) is set to SMALL, in order to output the bass signal from the subwoofer, it is necessary to set SW (subwoofer) to YES. If you attempt to set SW to NO, “ERROR” is displayed because there is no output source for the bass signals. The same will occur if you first set SW to NO, then try to set F to SMALL.
- When C (center) is set to NONE, the speaker is set to phantom mode (an output mode in which the center channel signal is allocated to the front left/right speakers).
- When C (center) is set to LARGE or SMALL, monaural source audio is output from the center speaker. If C is set to NONE, monaural source audio is output from the front left/right speakers.
- The set speaker modes are applied automatically to other surround modes too. (Natural/Hall cannot use a center speaker.)
- In Off mode, separate settings from other surround modes can be made. If you press the Off button, then select F (front) mode, the SW (subwoofer) mode is set automatically. (F:LARGE + SW:YES cannot be set.)

Center/rear output level *RC*

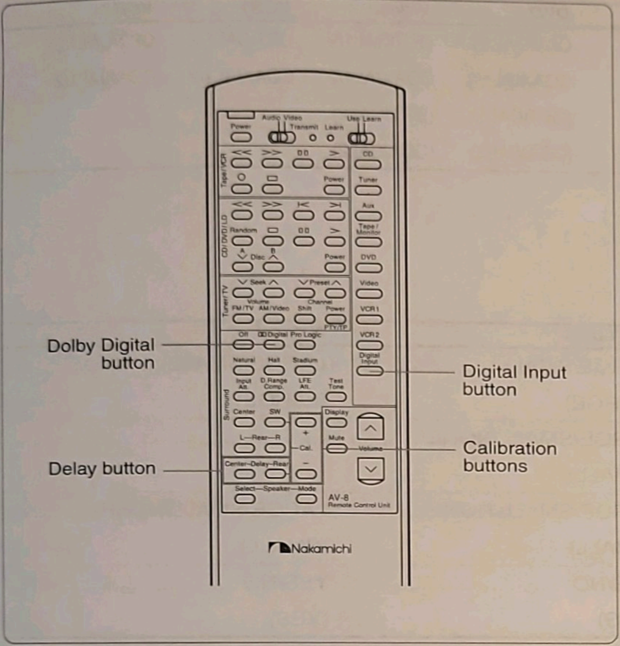


Before setting the output level, please adjust the front left/right volume balance with the Balance control on the receiver.

1. Press the Digital Input button on the receiver or the remote control to select digital input.
2. Press the Dolby Digital button on the receiver or the remote control to select a multi-channel mode.
3. Press the Test Tone button on the remote control to output test tones.
4. While the test tones are output from the center or rear channel, press the calibration buttons on the remote control and set the output level.
5. When the setting is complete, press the Test Tone button again to end the test tones.

- The test tones are output for two seconds at a time in the order F-L (front left)/C (center)/F-R (front right)/ R-R (rear right)/ R-L (rear left).
- A channel for which the speaker mode is set NONE is skipped.
- F-L and F-R are reference signals for setting the C/R-R/R-L output levels. Therefore, you cannot set the F-L and F-R output levels.
- If you press the Center button or Rear-L/R button on the remote control during test tone output, you can forcibly select the C channel or R-L/R-R channel.
- The output levels are also automatically applied to Pro Logic mode.
- Set the rear output level for Natural/Hall modes by pressing the Natural or Hall button, then carrying out steps 3-5. (The center channel is skipped.)
- Set the output level for stadium mode by pressing the Stadium button, then carrying out steps 3-5.

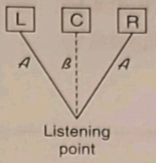
Center/rear delay time settings *RC*


Dolby Digital button
Delay button
Digital Input button
Calibration buttons
AV-8
Nakamichi

1. Press the Digital Input button on the receiver or the remote control to select digital input.
2. Press the Dolby Digital button on the receiver or the remote control to select a multi-channel mode.
3. Press the Delay button (Center or Rear) on the remote control.
4. Set the delay time with the calibration buttons on the remote control based on the delay time chart. About five seconds after the setting is completed, setting mode ends automatically.

- The delay time is also automatically applied to Pro Logic mode.
- Pro Logic mode rear delay time is automatically set to a value of 15 ms greater than the value in step 4.

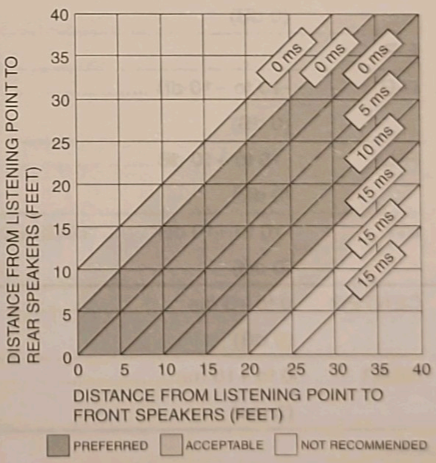
Center delay time chart


L
C
R
A
B
A
Listening point

Set based on the value (*A* - *B*) of the distance from the listening point to the front L/R speaker (*A*) to the distance from the listening point to the center speaker (*B*).

A-B	*Delay time*
0 feet	0 ms
1 feet	1 ms
2 feet	2 ms
3 feet	3 ms
4 feet	4 ms
5 feet	5 ms

Rear delay time chart



Setting and adjustment table

Setting item	*CD*	*Tuner*	*Aux*	*Tape*	*DVD*	*Video*	*VCR1*	*VCR2*
Digital input	OPTICAL1/2	–	OPTICAL1/2	–	OPTICAL1/2	OPTICAL1/2	OPTICAL1/2	OPTICAL1/2
	COAXIAL1/2	–	COAXIAL1/2	–	COAXIAL1/2	COAXIAL1/2	COAXIAL1/2	COAXIAL1/2
					(OPTICAL1)	(OPTICAL2)		
					(COAXIAL1)	(COAXIAL2)		

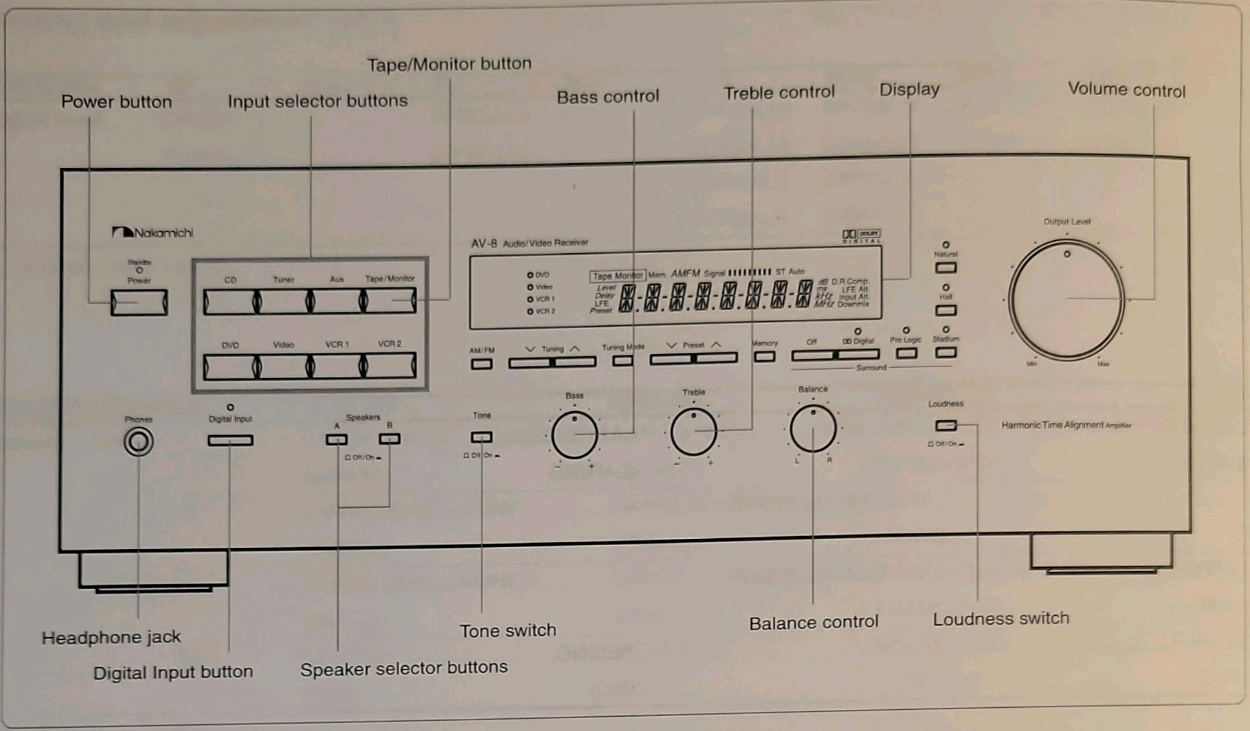
( ) : Indicates default setting.

Setting/adjustment item		*Dolby Digital*	*Pro Logic*	*Natural*
Speaker mode	F	LARGE/SMALL	LARGE/SMALL	LARGE/SMALL ....
		(LARGE)	(LARGE)	(LARGE)
	C	LARGE/SMALL/NONE	LARGE/SMALL/NONE	....
		(SMALL)	(SMALL)	
	R	LARGE/SMALL/NONE	LARGE/SMALL/NONE	LARGE/SMALL/NONE ....
		(SMALL)	(SMALL)	(SMALL)
	SW	YES/NO	YES/NO	YES/NO ....
		(YES)	(YES)	(YES)
Output level	F-L	–	–	–
	C	-10 to +10 dB	-10 to +10 dB	–
		(0 dB)	(0 dB)	
	F-R	–	–	–
	R-R	-10 to +10 dB	-10 to +10 dB	-10 to +10 dB
		(0 dB)	(0 dB)	(0 dB)
	R-L	-10 to +10 dB	-10 to +10 dB	-10 to +10 dB
		(0 dB)	(0 dB)	(0 dB)
	SW	-10 to +10 dB*	-10 to +10 dB*	-10 to +10 dB*
		(0 dB)	(0 dB)	(0 dB)
Delay time	CENTER	0 to +5 ms	0 to +5 ms	–
		(0 dB)	(0 dB)	
	REAR	0 to +15 ms	+15 to +30 ms	–
		(5 ms)	(20 ms)	

( ) : Indicates default setting.
... : Indicates that setting is linked.
* : Adjust while listening to source.

Hall	***Stadium***	***Off***
LARGE/SMALL (LARGE)	LARGE/SMALL (LARGE)	LARGE/SMALL (LARGE)
	LARGE/SMALL/NONE (SMALL)	–
LARGE/SMALL/NONE (SMALL)	LARGE/SMALL/NONE (SMALL)	–
YES/NO (YES)	YES/NO (YES)	YES/NO (NO)
–	–	–
–	-10 to +10 dB (0 dB)	–
–	–	–
-10 to +10 dB (0 dB)	-10 to +10 dB (0 dB)	–
-10 to +10 dB (0 dB)	-10 to +10 dB (0 dB)	–
-10 to +10 dB* (0 dB)	-10 to +10 dB* (0 dB)	-10 to +10 dB* (0 dB)
–	–	–
–	–	–

Basic Operation


Tape/Monitor button
Power button
Input selector buttons
Bass control
Treble control
Display
Volume control
Nakamichi
Standby
Power
CD
Tuner
Aux
Tape/Monitor
DVD
Video
VCR 1
VCR 2
AV-8 Audio/Video Receiver
AM/FM
Tuning
Tuning Mode
Preset
Memory
Off
Digital
Pro Logic
Surround
Natural
Hall
Stadium
Output Level
Min
Max
Phones
Digital Input
Speakers
A
B
Tone
Bass
Treble
Balance
Loudness
Harmonic Time Alignment Amplifier
Headphone jack
Digital Input button
Speaker selector buttons
Tone switch
Balance control
Loudness switch

Power on/off *MAIN/RC*

The unit can be turned on and off by pressing the Power button on the receiver or the remote control. When the unit is turned on, the Standby indicator goes out.

- The unit memorizes any selected settings for each program source, also while in standby mode. Therefore it is not necessary to repeat the settings each time.
- When the unit is turned on, the same source that was active before power-off is again selected.

CAUTION: Some internal circuits of the unit are powered continuously as long as the Standby indicator is lit. If the unit is not to be used for an extended period (such as during a prolonged absence), be sure to disconnect the power cord. Settings for each program source will be retained for about 2 weeks also while the power cord is disconnected. If this period is exceeded, settings will have to be made again.

Volume adjustment *MAIN/RC*

Use the volume control on the receiver or the Volume buttons on the remote control to adjust the listening volume.

Program source selection *MAIN/RC*

The input selector buttons on the receiver or the remote control can be used to select a program source. Simply by pressing a button in standby mode, the unit is turned on and the source is selected.

- Surround mode settings are stored for each program source separately, so that you will not have to repeat a setting unless you want to change it.
- Pressing the Tape/Monitor button during recording with a three-head cassette deck allows off-the-tape monitoring (see page 26).

Tone control *MAIN*

When the Tone switch on the receiver is engaged, the tone controls are active, allowing adjustment of bass and treble.

- Bass adjustment range: ±10 dB (20 Hz)
- Treble adjustment range: ±10 dB (20 kHz)
- When the controls are not needed, we recommend setting the Tone switch to Off (switch disengaged). This bypasses the tone control circuitry entirely, resulting in shorter signal path and further enhanced sound quality.

Balance adjustment *MAIN*

The Balance control on the receiver can be used to adjust the left/right level balance of the front speakers.

Loudness compensation *MAIN*

When the Loudness switch is engaged, low and high frequencies are emphasized. This is useful for listening at low levels where these frequencies tend to be perceived less prominently.

- Bass boost: +10 dB (20 Hz)
- Treble boost: +6 dB (20 kHz)

Speaker selection *MAIN*

Using the speaker selector buttons on the receiver, you can control two pairs of front loudspeakers connected to the unit.

- When wishing to drive both loudspeaker pairs simultaneously, push both buttons (A and B) in.
- When wishing to listen with headphones only, disengage both buttons.

Headphone listening *MAIN*

You can connect a pair of stereo headphones to this unit. Use headphones with a rated impedance between 8 and 150 ohms.

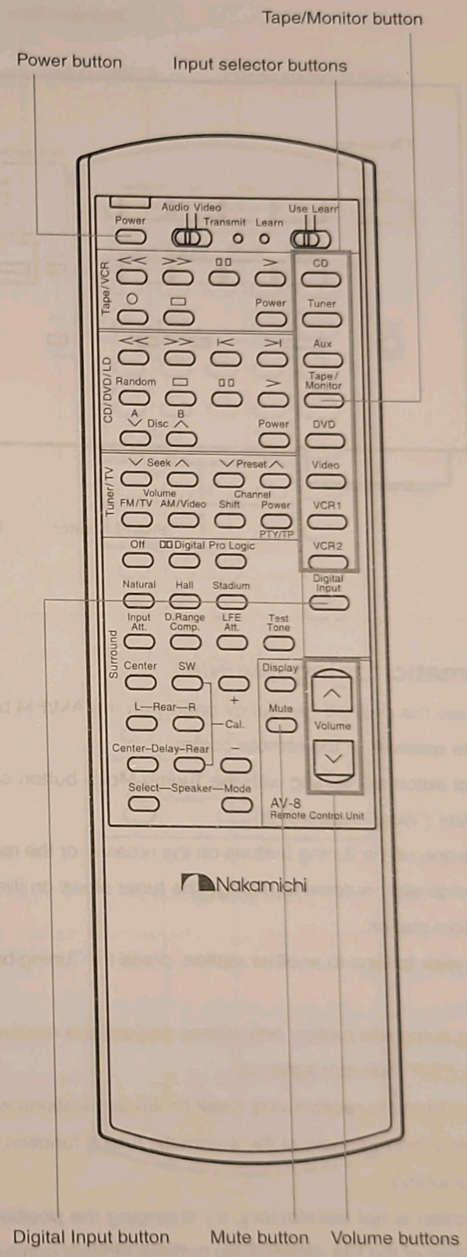
Audio mute *RC*

When the Mute button on the remote control is pressed, the indication “MUTE” appears on the display and the sound is cut off. Pressing the button once more or pressing one of the Volume buttons turns the sound back on again.

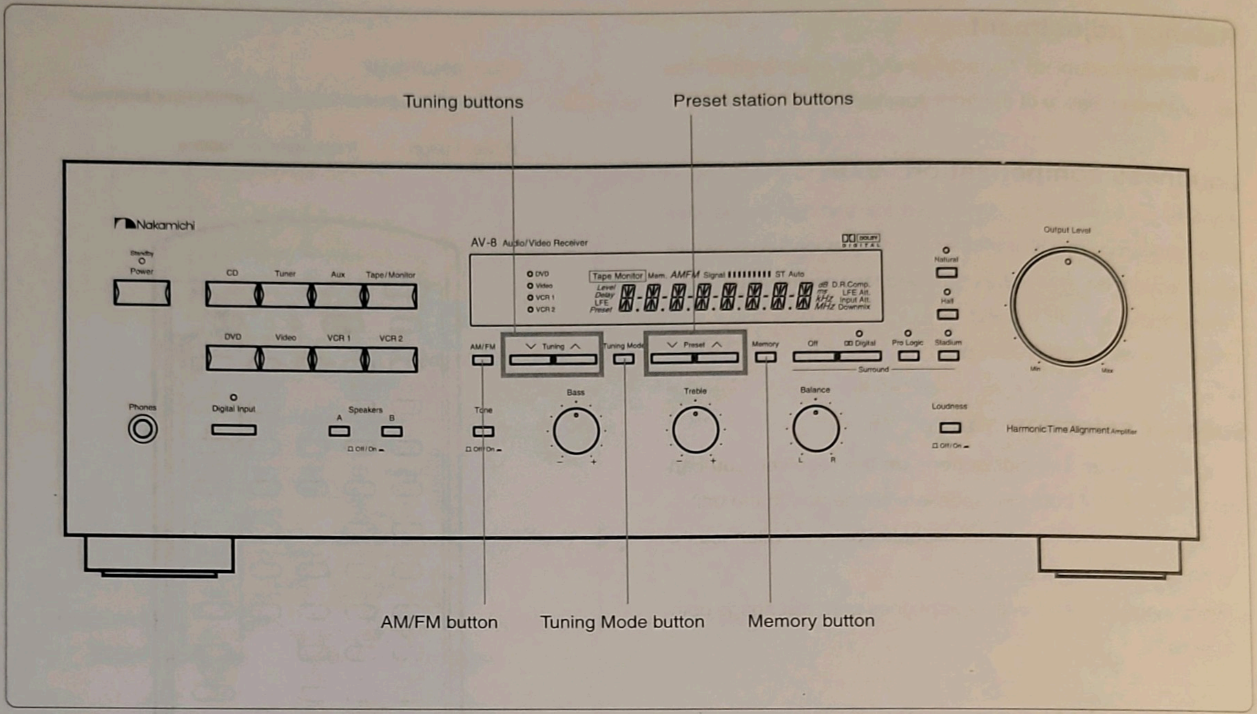
Digital/analog selection *MAIN/RC*

You can switch between optical/coaxial digital input and analog input with the Digital Input button on the receiver or the remote control.

Input signal	*Digital Input indicator color*
Optical digital (OPTICAL 1/2)	Amber
Coaxial digital (COAXIAL 1/2)	Green
Analog	Not lit


Tape/Monitor button
Power button
Input selector buttons
Audio Video
Transmit
Learn
Use Learn
Power
Tape/VCR
CD
Tuner
Aux
Tape/Monitor
DVD
CD/DVD/LD
Random
Disc
Tuner/TV
Seek
Preset
Volume
Channel
FM/TV
AM/Video
Shift
PTY/TP
Video
VCR1
VCR2
Off
Digital Pro Logic
Natural
Hall
Stadium
Digital Input
Input Att.
D.Range Comp.
LFE Att.
Test Tone
Surround
Center
SW
Display
Mute
Volume
L—Rear—R
Cal.
Center–Delay–Rear
Select—Speaker—Mode
AV-8
Remote Control Unit
Nakamichi
Digital Input button
Mute button
Volume buttons

FM/AM Broadcast Reception


Tuning buttons
Preset station buttons
Nakamichi
AV-8 Audio/Video Receiver
Power
CD
Tuner
Aux
Tape/Monitor
DVD
Video
VCR 1
VCR 2
AM/FM
Tuning
Tuning Mode
Preset
Memory
Phones
Digital Input
Speakers
Tone
Bass
Treble
Balance
Loudness
Output Level
Harmonic Time Alignment Amplifier
AM/FM button
Tuning Mode button
Memory button

Automatic tuning *MAIN/RC*

1. Choose the desired frequency band with the AM/FM button on the receiver or the remote control.
2. Select automatic tuning with the Tuning Mode button on the receiver (“Auto” indicator lit).
3. Press one of the Tuning buttons on the receiver or the remote control to start automatic tuning. The tuner stops on the first available station.
4. If you wish to tune to another station, press the Tuning button again.

- During automatic tuning, only strong stations are received in stereo (“ST” indicator lights up).
- When wishing to receive very weak broadcast stations which are below the threshold of the automatic tuning function, use manual tuning.
- If reception is not satisfactory, try changing the position or orientation of the FM antenna, so that the highest number of signal strength indicators lights up.

Manual tuning *MAIN*

1. Choose the desired frequency band with the AM/FM button on the receiver or the remote control.
2. Select manual tuning with the Tuning Mode button on the receiver (“Auto” indicator out).
3. Use the Tuning buttons on the receiver to tune to the desired frequency. Keeping a button depressed changes the frequency rapidly.

- During manual tuning, all stations are received in mono. This removes any stereo information but reduces noise on weak stations.
- Manual tuning cannot be carried out with the remote control.
- If reception is not satisfactory, try changing the position or orientation of the FM antenna, so that the highest number of signal strength indicators lights up.

Preset station tuning *MAIN/RC*

Broadcast stations can also be selected with the Preset station buttons on the receiver or the remote control.

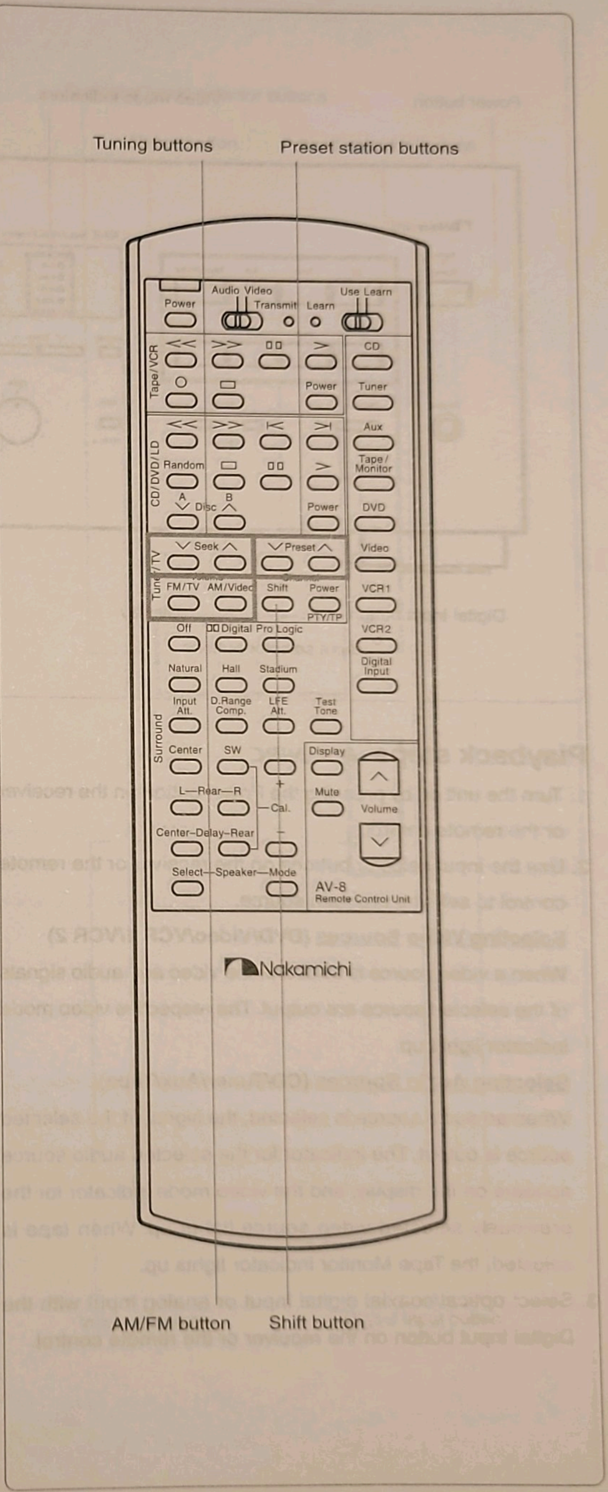
- Pressing the Shift button on the remote control switches the preset station number ahead by 10 places.

……

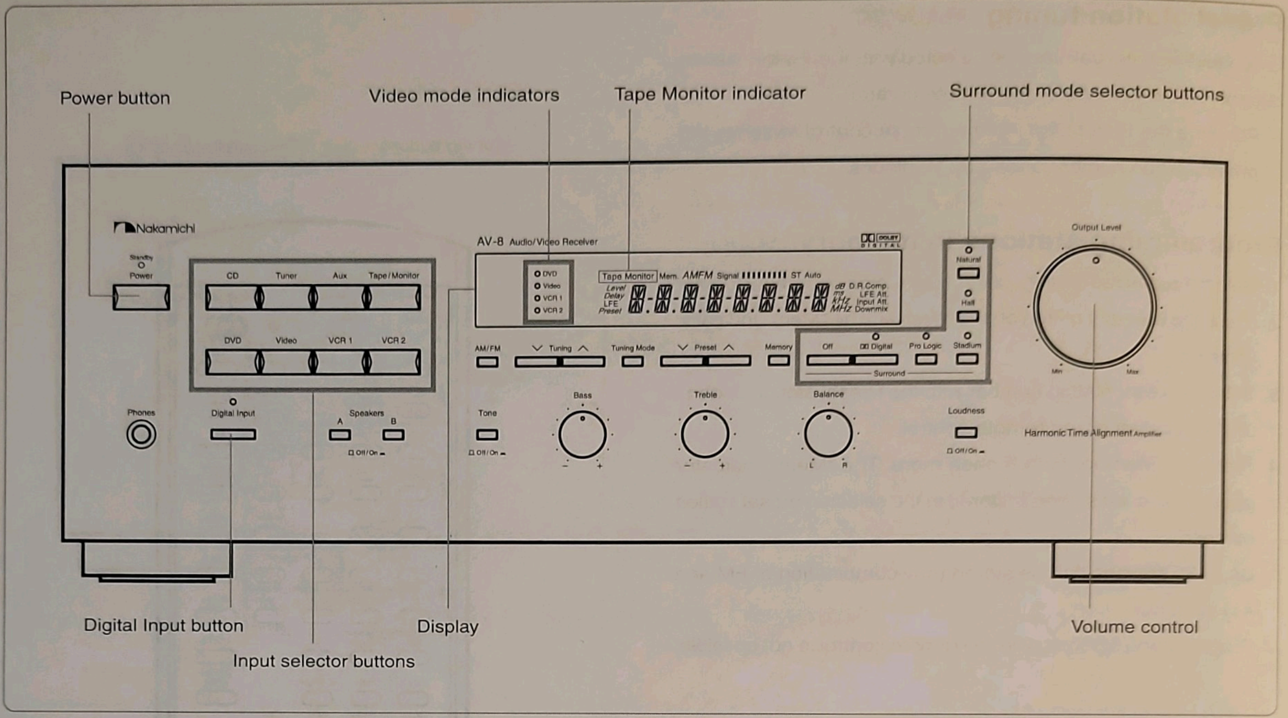
Programming stations in memory *MAIN*

1. Select the desired station, using auto tuning or manual tuning.
2. Press the Memory button on the receiver. The “Mem.” indicator lights up.
3. Select a preset station number with the Preset station buttons on the receiver or the remote control.
4. Press the Memory button once more. The “Mem.” indicator goes out and the station is stored in the selected preset station number.

- Up to 30 stations can be stored (any combination of FM and AM stations).
- Programming stations with the remote control is not possible.


Tuning buttons
Preset station buttons
Power
Audio Video
Transmit
Learn
Use Learn
Tape/VCR
CD
Power
Tuner
CD/DVD/LD
Aux
Random
Tape/Monitor
A
Disc
B
Power
DVD
Seek
Preset
Video
Tuner/TV
FM/TV
AM/Video
Shift
Power
PTY/TP
VCR1
Off
Digital
Pro Logic
VCR2
Digital Input
Natural
Hall
Stadium
Input Att.
D.Range Comp.
LFE Att.
Test Tone
Surround
Center
SW
Display
L—Rear—R
Cal.
Mute
Volume
Center–Delay–Rear
Select–Speaker–Mode
AV-8
Remote Control Unit
Nakamichi
AM/FM button
Shift button

Program Source Playback


Power button
Video mode indicators
Tape Monitor indicator
Surround mode selector buttons
Nakamichi
AV-8 Audio/Video Receiver
CD
Tuner
Aux
Tape/Monitor
DVD
Video
VCR 1
VCR 2
Phones
Digital Input
Speakers
Tone
Bass
Treble
Balance
Loudness
Natural
Hall
Off
Digital
Pro Logic
Stadium
Surround
Output Level
Harmonic Time Alignment Amplifier
Digital Input button
Display
Input selector buttons
Volume control

Playback steps *MAIN/RC*

1. Turn the unit on by pressing the Power button on the receiver or the remote control.
2. Use the input selector buttons on the receiver or the remote control to select a program source.

   Selecting Video Sources **(DVD/Video/VCR 1/VCR 2)**
   When a video source is selected, the video and audio signals of the selected source are output. The respective video mode indicator lights up.

   Selecting Audio Sources **(CD/Tuner/Aux/Tape)**
   When an audio source is selected, the signal of the selected source is output. The indicator for the selected audio source appears on the display, and the video mode indicator for the previously selected video source lights up. When tape is selected, the Tape Monitor indicator lights up.
3. Select optical/coaxial digital input or analog input with the Digital Input button on the receiver or the remote control.
4. Select surround mode with the surround mode selector buttons on the receiver or the remote control.

Playback source	*Available surround modes*
CD/Aux/DVD/Video/ VCR1/VCR2	Dolby Digital/Pro Logic/Natural/Hall/ Stadium/Off
Tuner/Tape	Off

5. Start playback at the source equipment.
6. Adjust the listening volume with the volume control on the receiver or the Volume buttons on the remote control.
7. If necessary, make other adjustments.

Surround mode

Surround mode	*Application and effects*
Off	Normal 2-channel stereo playback
◘◘Digital (Dolby Digital)	Playback of DVD or laserdisc with DOLBY DIGITAL mark
Pro Logic	Playback of laserdisc, video software, or DVD labeled “Dolby Surround”
Natural	Playback of source with rich reverberation component (creates natural sound field with breadth)
Hall	An effect is obtained that makes it sound as though you are listening in a concert hall.
Stadium	Creates a surround effect suitable for listening to live broadcasts of sports events or similar.

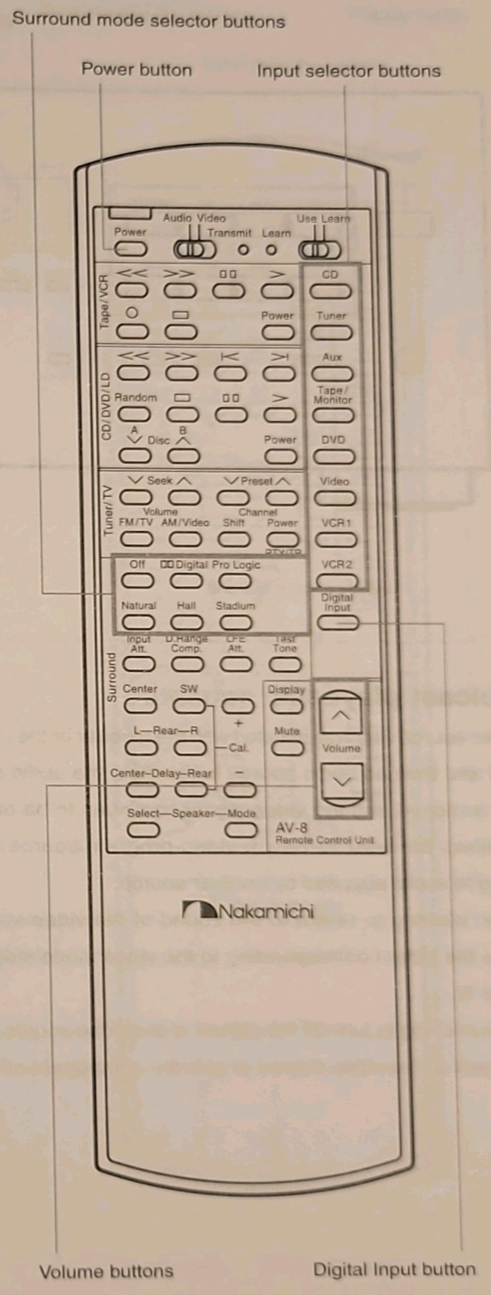
Auto detect function

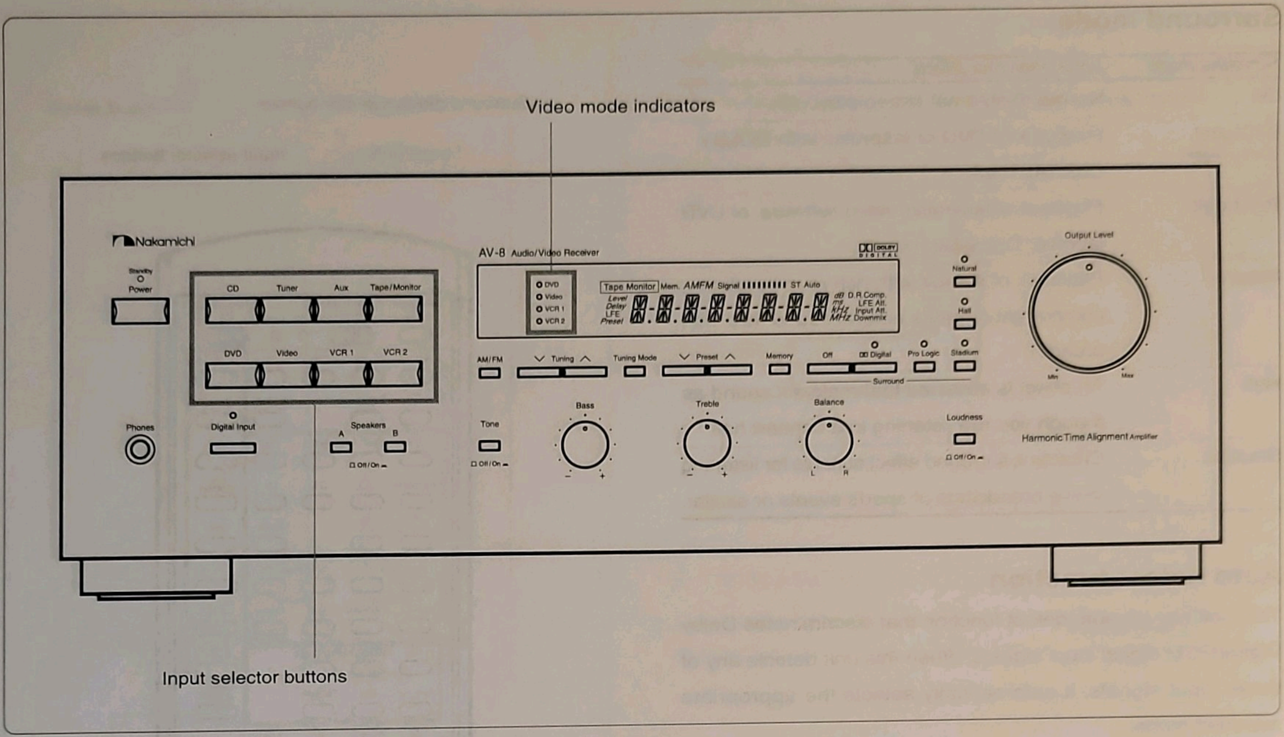
This unit has an auto detect function that discriminates Dolby Digital/PCM digital input signals. When this unit detects any of these input signals, it automatically selects the appropriate surround mode.

- You can only change to Pro Logic/Natural/Hall/Stadium mode when PCM digital input is selected as Off.
- Laserdiscs and DVDs labelled “Dolby Surround” include some on which Pro Logic encoded signals are recorded among the Dolby Digital signals and some on which they are not.

Pro Logic encoded signals	*Surround mode automatically selected*
Recorded	Pro Logic (The Dolby Digital indicator lights up green and the Pro Logic indicator lights up amber. To end this mode, press the Dolby Digital button.)
Not recorded	Dolby Digital (Audio is only output from the front left/right speakers. To play back in Pro Logic mode, press the Dolby Digital button.)

- Note that due to the type of program source played back on this unit, noise may sometimes appear and audio might not be heard during the digital input signal detection period (about 0.5 seconds).


Surround mode selector buttons
Power button
Input selector buttons
Power
Audio Video
Transmit
Learn
Use Learn
Tape/VCR
CD
Tuner
Aux
Tape/Monitor
DVD
CD/DVD/LD
Random
Disc
Tuner/TV
Seek
Preset
Volume
Channel
FM/TV
AM/Video
Shift
Video
VCR1
VCR2
Off
◘◘Digital
Pro Logic
Natural
Hall
Stadium
Digital Input
Surround
Input Att.
D.Range Comp.
LFE Att.
Test Tone
Center
SW
Display
L—Rear—R
Cal.
Mute
Volume
Center–Delay–Rear
Select—Speaker—Mode
AV-8
Remote Control Unit
Nakamichi
Volume buttons
Digital Input button


Video mode indicators
Nakamichi
Standby
Power
CD
Tuner
Aux
Tape/Monitor
DVD
Video
VCR 1
VCR 2
Phones
Digital Input
Speakers
A
B
Off/On
AV-8 Audio/Video Receiver
DOLBY DIGITAL
Tape Monitor
Mem.
AMFM
Signal
ST
Auto
Level
Delay
LFE
Preset
dB
ms
kHz
MHz
D.R.Comp.
LFE Att.
Input Att.
Downmix
AM/FM
Tuning
Tuning Mode
Preset
Memory
Off
Digital
Pro Logic
Stadium
Hall
Natural
Surround
Tone
Off/On
Bass
Treble
Balance
L
R
Loudness
Off/On
Output Level
Min
Max
Harmonic Time Alignment Amplifier
Input selector buttons

Simulcast playback *MAIN/RC*

If a video source was first selected with the receiver or the remote control and then an audio source is selected, the audio signal only is switched and the video signal continues to be output. This allows the user to view a video program source while listening to audio supplied by another source.

- When wishing to return to the sound of the video source, press the button corresponding to the video mode indicator that is lit.
- When wishing to turn off the picture of the video source, stop playback at the video source or turn the component off.

Output level adjustment *RC*

1. During source playback, use the channel selector buttons on the remote control to select the channel you want to adjust.
2. Use the calibration buttons on the remote control to adjust the output level. After five seconds of no input, the setting mode is automatically terminated.

Surround mode	*C* *(Center)*	*R-L/R-R* *(Rear L/R)*	*SW* *(Subwoofer)*
Dolby Digital	-10 to +10 dB	-10 to +10 dB	-10 to +10 dB
Pro Logic	-10 to +10 dB	-10 to +10 dB	-10 to +10 dB
Natural	–	-10 to +10 dB	-10 to +10 dB
Hall	–	-10 to +10 dB	-10 to +10 dB
Stadium	-10 to +10 dB	-10 to +10 dB	-10 to +10 dB
Off	–	–	-10 to +10 dB

The Dolby Digital/Pro Logic values change together.
The Natural/Hall/Stadium/Off values change independently.

- The adjusted value is stored into memory as the setting and automatically used whenever this same surround mode is selected.

Service information display *RC*

(Dolby Digital/Pro Logic/Natural/Hall/Stadium mode)

1. Each time the Display button on the remote control is pressed, the follower information is displayed.

Selected surround mode

Selected digital input
(Not displayed if analog input is selected)

Audio input channel signal name (only for Dolby Digital mode)
- L (front left)
- Center (center)
- R (front right)
- S (rear/surround monaural)
- LS (rear/surround left)
- RS (rear/surround right)
- LFE (low-frequency effect sound)

2. This information goes off automatically after about five seconds.

……

Delay time adjustment *RC*

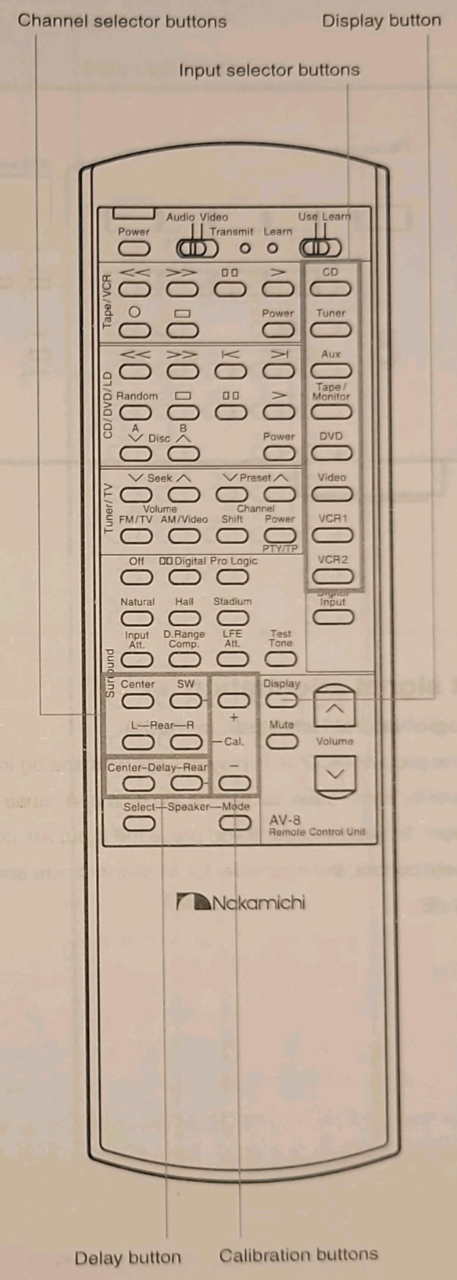
(Dolby Digital/Pro Logic mode)

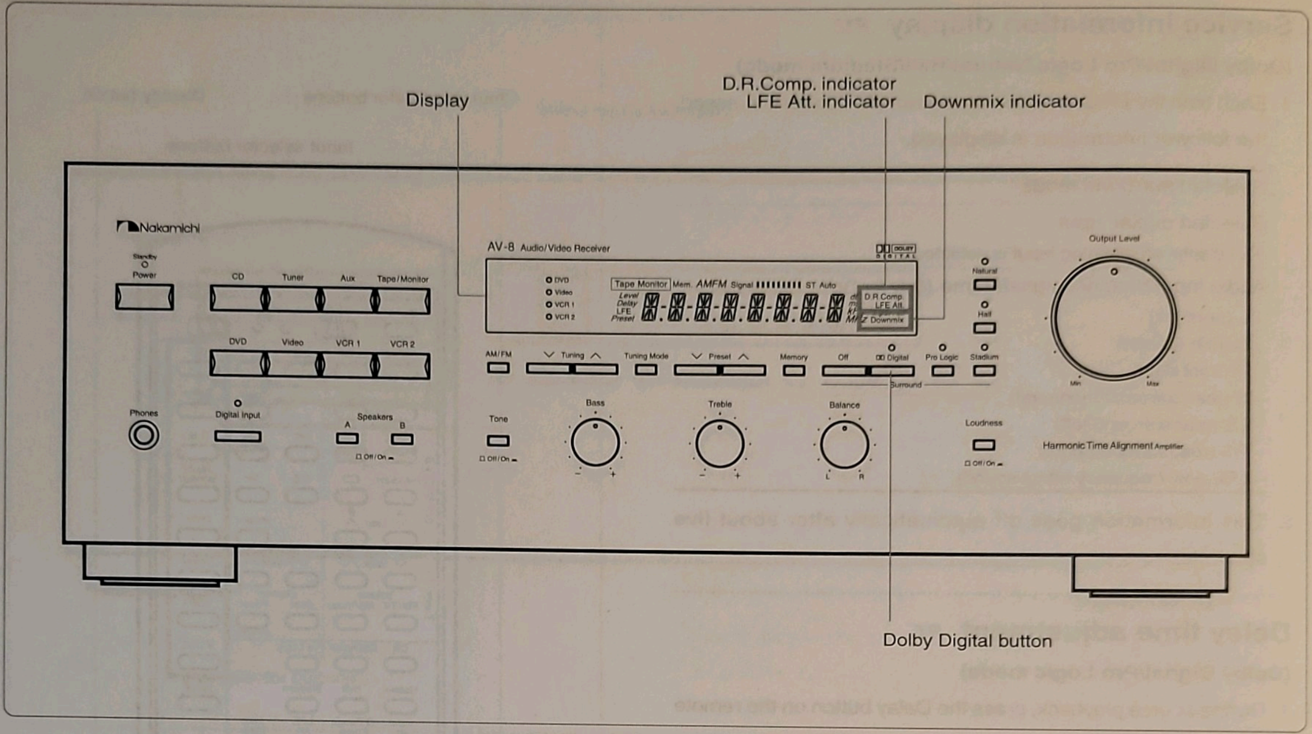
1. During source playback, press the Delay button on the remote control.
2. Use the calibration buttons on the remote control to adjust the delay time. After five seconds of no input, the setting mode is automatically terminated.

Surround mode	*CENTER*	*REAR*
Dolby Digital	0 to +5 ms	0 to +15 ms
Pro Logic	0 to +5 ms	+15 to +30 ms

The Dolby Digital/Pro Logic values change together.

- The adjusted value is stored into memory as the setting and automatically used whenever this same surround mode is selected.


Channel selector buttons
Display button
Input selector buttons
Power
Audio Video
Transmit
Learn
Use Learn
Tape/VCR
CD
Tuner
Power
CD/DVD/LD
Aux
Tape/Monitor
Random
DVD
A
Disc
B
Tuner/TV
Seek
Preset
Video
Volume
Channel
FM/TV
AM/Video
Shift
Power
PTY/TP
VCR1
Off
Digital
Pro Logic
VCR2
Digital Input
Natural
Hall
Stadium
Input Att.
D.Range Comp.
LFE Att.
Test Tone
Surround
Center
SW
Display
L—Rear—R
+
Cal.
−
Mute
Volume
Center–Delay–Rear
Select—Speaker—Mode
AV-8
Remote Control Unit
Nakamichi
Delay button
Calibration buttons


Display
D.R.Comp. indicator
LFE Att. indicator
Downmix indicator
Nakamichi
Standby
Power
CD
Tuner
Aux
Tape/Monitor
DVD
Video
VCR 1
VCR 2
Phones
Digital Input
Speakers
A
B
Off/On
AV-8 Audio/Video Receiver
DVD
Video
VCR 1
VCR 2
Tape Monitor
Mem.
AMFM
Signal
ST
Auto
Level
Delay
LFE
Preset
D.R.Comp.
LFE Att.
Downmix
AM/FM
Tuning
Tuning Mode
Preset
Memory
Off
Digital
Pro Logic
Stadium
Surround
Natural
Hall
Tone
Off/On
Bass
Treble
Balance
L
R
Loudness
Off/On
Output Level
Min
Max
Harmonic Time Alignment Amplifier
Dolby Digital button

Input signal attenuation *RC*

(Pro Logic/Natural/Hall/Stadium mode)

When the program source is played back with analog input, the input level for some sources may be too high and cause clipping (distortion). In such a case, if you press the Input Att. button on the remote control, the input level for all channels are attenuated about 6 dB.

Downmix playback *MAIN/RC*

(Dolby Digital mode only)

1. In Dolby Digital mode, if you press the Dolby Digital button on the receiver or the remote control, you can output the multi-channel input signals downmixed into normal stereo signals. (The Downmix indicator lights up.)
2. To end the downmix, press the Dolby Digital button again. (The Downmix indicator goes out.)

- In the following cases, if you do not use downmix playback, only the front left/rear channel audio is output and the reproduced sound is incomplete.

Cases in which downmix playback is necessary
Listening on a 2-channel speaker system
Listening with headphones

LFE signal attenuation *RC*

(Dolby Digital mode only)

1. The LFE signal (low-frequency effect) output level is large, so if clipping (distortion) occurs or the sound seems too loud, press the LFE Att. button on the remote control. This attenuates just the LFE signal output level about 10 dB without changing the output level for low frequencies on other channels. (The LFE Att. indicator lights up.)
2. To end LFE signal attenuation, press the LFE Att. button again. (The LFE Att. indicator goes out.)

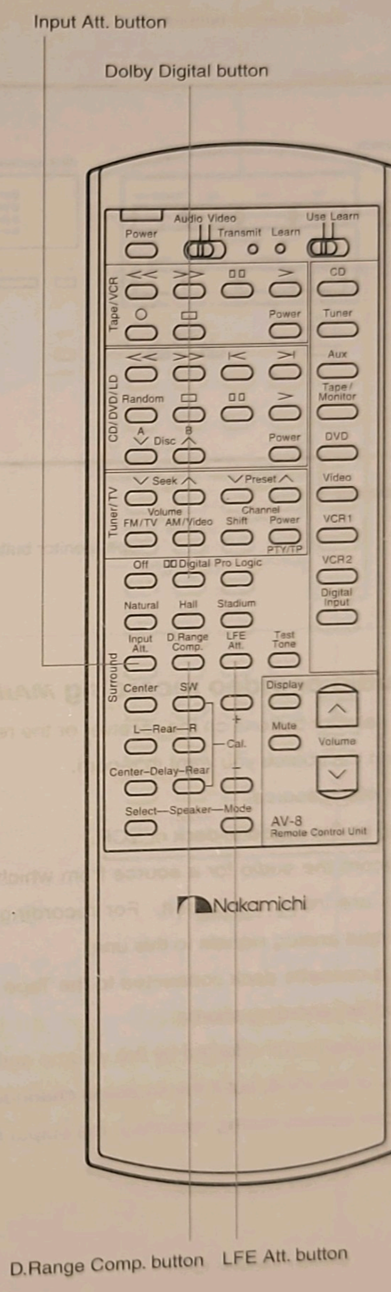
……

Dynamic range compression *RC*

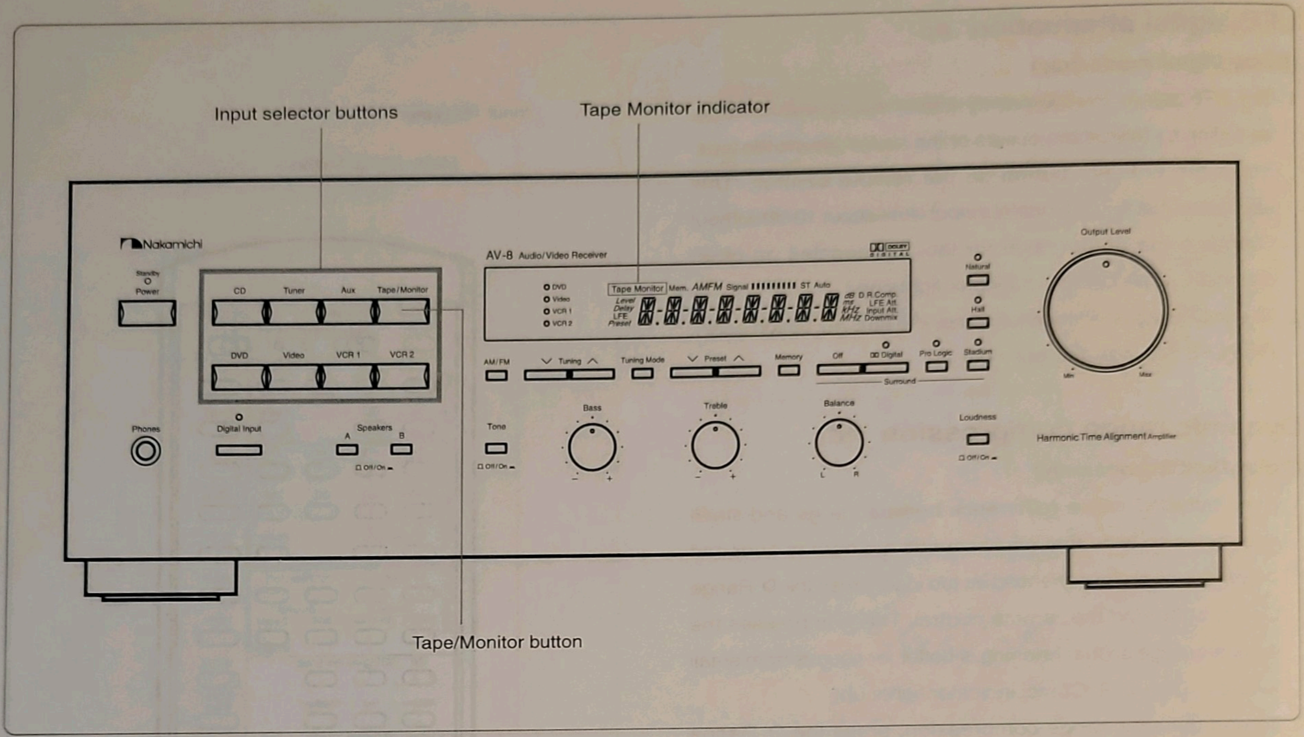
(Dolby Digital mode only)

1. If the dynamic range (difference between large and small sounds) is so wide that small sounds are hard to hear and large sounds are experienced as too loud, press the D. Range Comp. button on the remote control. This compresses the dynamic range so that listening is better for sounds from small to large. (The D.R. Comp. indicator lights up.)
2. To end dynamic range compression, press the D. Range Comp. button again. (The D. R. Comp. indicator lights up.)

- When using a system that can reproduce large volume, when listening during the day when the volume does not matter, etc. we recommend not compressing the dynamic range. A wide dynamic range enables you to enjoy the dynamic surround as though in the theater, which is a feature of DVD software.


Input Att. button
Dolby Digital button
Power
Audio Video
Transmit
Learn
Use Learn
Tape/VCR
CD
Tuner
CD/DVD/LD
Random
A
B
Disc
Aux
Tape/Monitor
DVD
Tuner/TV
Seek
Preset
Volume
Channel
FM/TV
AM/Video
Shift
PTY/TP
Video
VCR1
VCR2
Off
Digital
Pro Logic
Natural
Hall
Stadium
Digital Input
Input Att.
D.Range Comp.
LFE Att.
Test Tone
Surround
Center
SW
Display
L—Rear—R
Cal.
Mute
Volume
Center–Delay–Rear
Select—Speaker—Mode
AV-8
Remote Control Unit
Nakamichi
D.Range Comp. button
LFE Att. button

Recording


Input selector buttons
Tape Monitor indicator
Nakamichi
Standby
Power
CD
Tuner
Aux
Tape/Monitor
DVD
Video
VCR 1
VCR 2
AV-8 Audio/Video Receiver
Tape Monitor
AM/FM
Tuning
Tuning Mode
Preset
Memory
Off
Digital
Pro Logic
Surround
Natural
Hall
Stadium
Output Level
Min
Max
Phones
Digital Input
Speakers
A
B
Tone
Bass
Treble
Balance
Loudness
Harmonic Time Alignment Amplifier
Tape/Monitor button

Steps for audio or video recording *MAIN/RC*

1. Use the input selector buttons on the receiver or the remote control to select the source you want to record.
2. Start playback of the source.
3. Start recording on the cassette deck or VCR.

- You cannot record the audio for a source from which only digital signals are input to this unit. For recording, it is necessary to input analog signals to this unit.
- The output of a cassette deck connected to the Tape jacks cannot be used as recording source.
- The recording signal is not affected by the volume and tone control settings of the AV-8, but if the source is changed with the input selector buttons during recording, the output signal will also change.

Record monitor *MAIN/RC*

When a three-head tape deck is used for recording, pressing the Tape/Monitor button on the receiver or the remote control allows off-the-tape monitoring, for checking the quality of the recorded signal. During monitoring, the Tape Monitor indicator appears.

- To stop monitoring, press the Tape/Monitor button once more, or press the input selector button corresponding to the currently selected source.

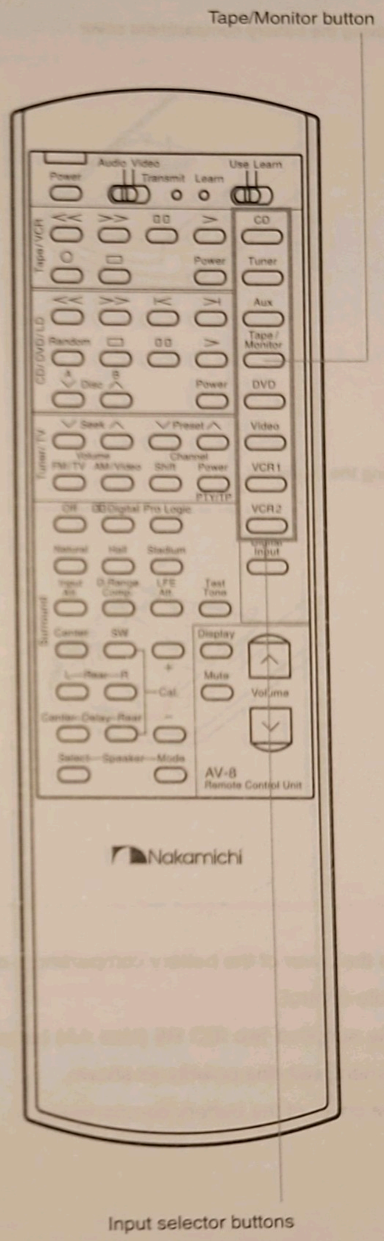
Video tape dubbing *MAIN/RC*

By selecting VCR 1 (or VCR 2) as a source and carrying out recording on VCR 2 (or VCR 1), video tape dubbing can be performed.

Cassette tape dubbing *MAIN/RC*

1. Connect a second cassette deck to the Audio Input L/R jacks of the VCR 1 (or VCR 2) connector set on the AV-8.
2. Use the input selector buttons on the receiver or the remote control to select VCR 1 (or VCR 2).
3. Carry out recording on the cassette deck connected to the Tape jacks of the AV-8. In this way, the tape inserted in the cassette deck connected to VCR 1 (or VCR 2) can be dubbed.

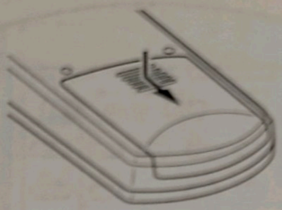
- If a three head cassette deck is connected to the Tape jacks of the AV-8, the Tape/Monitor button on the receiver or the remote control can be used to carry out off-the-tape monitoring.


Tape/Monitor button
Power
Audio Video
Transmit
Learn
Use Learn
Tape/VCR
CD/DVD/LD
Random
Disc
Tuner/TV
Seek
Preset
Volume
Channel
FM/TV
AM/Video
Shift
PTY/TP
Off
Digital
Pro Logic
Natural
Hall
Stadium
Input Att.
D.Range Comp.
LFE Att.
Test Tone
Surround
Center
SW
L—Rear—R
Cal.
Center–Delay–Rear
Select—Speaker—Mode
CD
Tuner
Aux
Tape/Monitor
DVD
Video
VCR1
VCR2
Digital Input
Display
Mute
Volume
AV-8
Remote Control Unit
Nakamichi
Input selector buttons

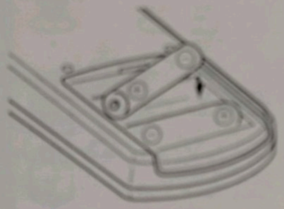
Use of the Remote Control

Inserting the batteries

Removing the battery compartment cover

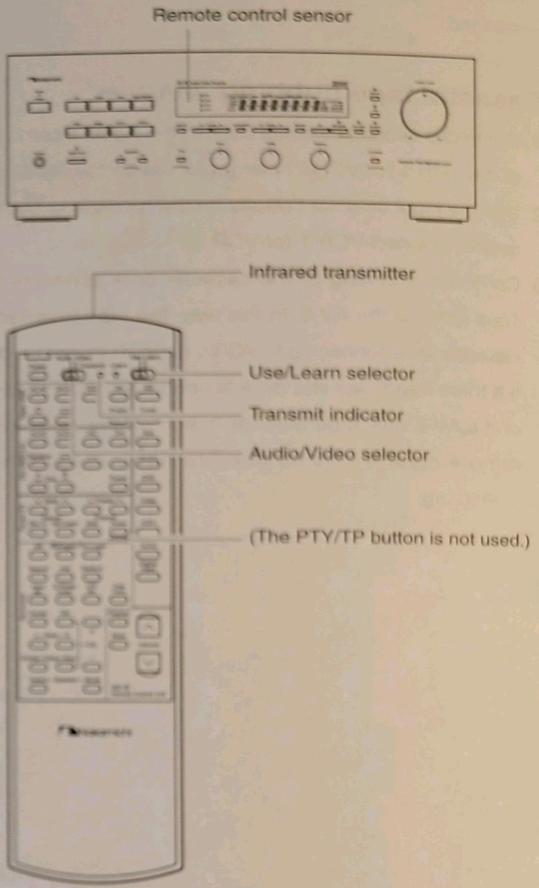


Inserting the batteries



1. Remove the cover of the battery compartment on the rear of the remote control.
2. Insert the supplied two IEC R6 (size AA) batteries into the compartment, with the polarity as shown.
3. Close the cover of the battery compartment.

Using the remote control


Remote control sensor
Infrared transmitter
Use/Learn selector
Transmit indicator
Audio/Video selector
(The PTY/TP button is not used.)

1. Set the Audio/Video selector to the type of equipment you want to control.
2. Set the Use/Learn selector to "Use".
3. Point the transmitter of the remote control at the sensor on the AV-8 and press the desired operation button. The Transmit indicator lights up when signals are being sent.
   - The remote control can be used to directly control a Nakamichi CD player. For control of a Nakamichi cassette deck, a System Remote cable connection is necessary (see page 9).

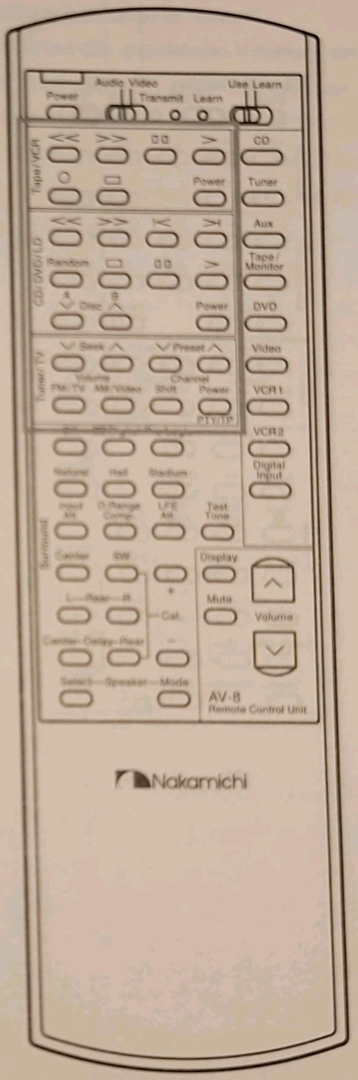
Programming the remote control (learn function)

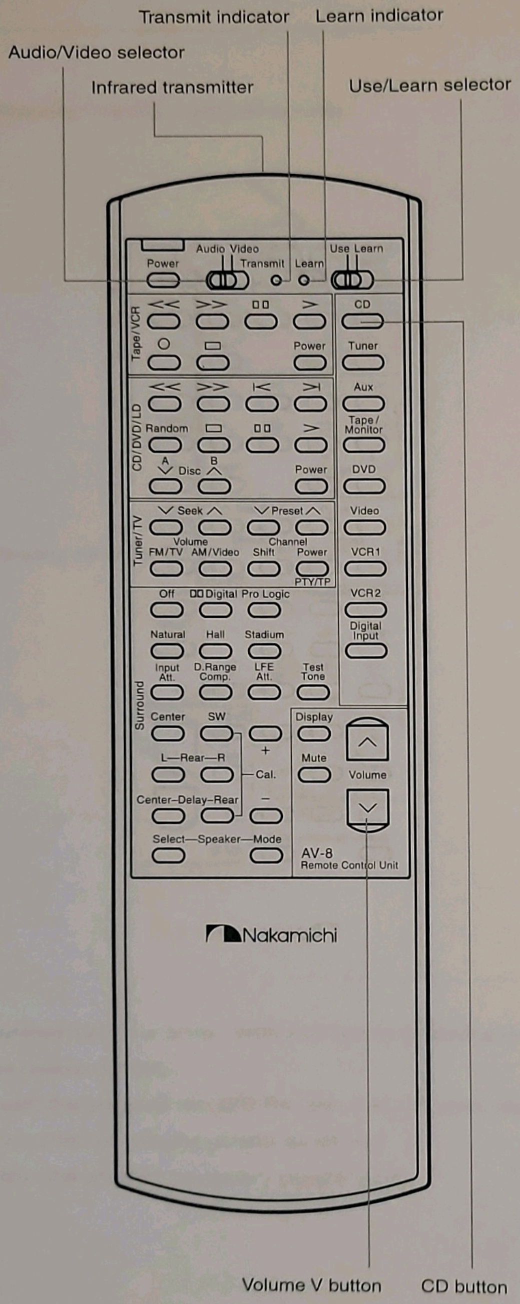
By having the remote control "learn" the signals used by the remote control units of video equipment (such as a VCR, DVD player, laserdisc player, or TV set) and audio equipment of other manufacturers, you can operate the entire system using only the remote control of the AV-8.

- The remote control is already labeled for major VCR/DVD/LD/TV functions, but the corresponding signals are not yet stored. Please refer to the next page for information on how to program the remote control.

- The buttons of the tuner section are preprogrammed to control the tuner of the AV-8, and the CD and Tape sections are preprogrammed for control of Nakamichi CD players and cassette decks. If remote control signals for equipment by other manufacturers are programmed in these buttons, the original functions for Nakamichi equipment will become unavailable. However, these can be restored by performing the steps described in "Clearing programmed functions" on page 39.

Buttons which can be programmed


Power
Audio Video
Transmit
Learn
Use Learn
Tape/VCR
<<
>>
Power
CD
Tuner
CD/DVD/LD
Aux
Random
Tape/
Monitor
A
Disc
B
Power
DVD
Tuner/TV
Seek
Preset
Video
Volume
Channel
FM/TV
AM/Video
Shift
Power
PTY/TP
VCR1
VCR2
Natural
Hall
Stadium
Digital
Input
Surround
Input
Att.
D.Range
Comp.
LFE
Att.
Test
Tone
Center
SW
Display
+
L—Rear—R
Cal.
Mute
Volume
Center–Delay–Rear
–
Select—Speaker—Mode
AV-8
Remote Control Unit
Nakamichi


Transmit indicator
Learn indicator
Audio/Video selector
Infrared transmitter
Use/Learn selector
Audio Video
Power
Transmit
Learn
Use Learn
Tape/VCR
CD
Power
Tuner
CD/DVD/LD
Aux
Random
Tape/ Monitor
Disc
Power
DVD
Tuner/TV
Seek
Preset
Video
Volume
Channel
FM/TV
AM/Video
Shift
Power
PTY/TP
VCR1
Off
Digital
Pro Logic
VCR2
Natural
Hall
Stadium
Digital Input
Input Att.
D.Range Comp.
LFE Att.
Test Tone
Surround
Center
SW
Display
Mute
Volume
L—Rear—R
Cal.
Center–Delay–Rear
Select—Speaker—Mode
AV-8 Remote Control Unit
Nakamichi
Volume V button
CD button

Programming procedure

1. Set the Audio/Video selector to the required position ("Audio" for programming signals for audio equipment of other manufacturers and "Video" for programming signals for video equipment).
2. Set the Use/Learn selector to "Learn".
3. Position the remote control of the AV-8 and the remote control of the other equipment face to face, maintaining a distance of about 2 to 5 cm between the transmitter sections.
4. On the remote control of the AV-8, press the button with the function you want to program. The Learn indicator lights up.
5. Press and hold the corresponding button on the remote control of the other equipment.
6. After verifying that the Learn indicator has flashed twice, release the button on the remote control of the other equipment.

Indicator	*State*
Learn flashes twice	Memory complete
Transmit and Learn are flashing together	Memory error (Repeat the programming procedure.)
Learn keeps on flashing	Memory overrun (Further programming is not possible. Change an existing function or clear a programmed function.)

7. Repeat steps 4 - 6 for other functions.

Example for programming the power button of a laserdisc player

1. Press the Power button in the LD section of the AV-8 remote control.
2. Press and hold the Power button on the remote control of the laserdisc player.
3. When the Learn indicator on the AV-8 remote control has flashed twice, release the button on the remote control of the laserdisc player. The Power button in the LD section of the AV-8 remote control now turns the laserdisc player on and off.

8. When programming is completed, set the Use/Learn selector to "Use". If the selector is left in the "Learn" position, the remote control does not function.

Changing programmed functions

Program the new function according to the steps described on the previous page. The old function will be overwritten and replaced by the new function.

Clearing programmed functions

1. Set the Audio/Video selector to the position corresponding to the area you want to erase ("Audio" for signals for audio equipment of other manufacturers and "Video" for signals for video equipment).
2. Set the Use/Learn selector to "Learn".
3. Press and hold the CD and Volume V buttons simultaneously.
4. When the Learn indicator goes out, release the CD and Volume V buttons.
5. When clearing is completed, set the Use/Learn selector to "Use". If the selector is left in the "Learn" position, the remote control will not function.

Troubleshooting

Some apparent malfunctions may be remedied by simple checks as described below. If the problem persists, please contact your dealer or an authorized Nakamichi service center.

No power.

- Verify that the plug of the power cord is plugged properly into the AC outlet.

……

No picture or sound.

- Verify that all connections are established properly.

……

No sound.

- Verify that volume level is set to a suitable position.
- Verify that mute function is disabled.
- Verify that audio input signals are supplied properly.
- The protection circuitry may have been activated. Stop playback of the program source and wait a while until the amplifier automatically resets itself.

……

Some channels are interchanged.
No sound in some channels.

- Verify that audio equipment connections are established properly.
- Verify that balance is set correctly.

Hum is heard.

- Increase the distance between the AV-8 and the power amplifier.

……

FM broadcast is supposed to be in stereo, but sound is monaural.

- Use automatic tuning to receive the station.

……

FM or AM broadcasts cannot be received.

- Adjust position and/or orientation of antenna.

……

FM or AM broadcast reception is noisy.

- Adjust position and/or orientation of antenna.
- Increase distance between this unit and other electrical equipment.

……

Remote control cannot be operated.

- Verify that power is supplied to the AV-8.
- Verify that batteries are inserted properly.
- Replace both batteries with fresh ones.
- Point remote control at sensor when operating.
- Remove any obstacles between remote control and AV-8.
- Do not operate remote control units of other equipment at the same time.

Protection features

To guard against possible damage to the amplifier and connected equipment, this unit incorporates circuitry which constantly monitors operating conditions. If one of the conditions described below occurs, a relay cuts off the output in all channels. (The power is not turned off.) When regular conditions are restored, the amplifier automatically reverts to normal operation.

- Internal temperature exceeds normal levels
- DC is detected in output

If this happens, check all connections and verify that proper ventilation is provided, allowing the amplifier to dissipate the heat generated during operation. Driving low-impedance speakers to high levels for extended periods of time can also cause the protection circuitry to be activated.

If the protection circuitry is activated frequently, switch off the power and check connections of all components as well as installation conditions. If these checks reveal no particular problems and the protection circuitry is activated again after the amplifier was switched on, contact your dealer or an authorized Nakamichi service center.

Specifications

[Control Amplifier Section]

Analog Audio Section

Inputs	7 (CD, Aux, Tape, DVD, Video, VCR 1, VCR 2)
Recording Outputs	3 (Tape, VCR 1, VCR 2)
Pre outputs	6 channels (Front L/R, Center, Rear L/R, Subwoofer)
Input Sensitivity / Impedance	150 mV / 47 kohms
Rated Output Level / Impedance	
Pre output	1 V / 1 kohm
Recording Output	150 mV / 1 kohm
Subwoofer Output	1 V / 1 kohm
Maximum Output Level	8 V
Total Harmonic Distortion	Less than 0.01 % (20 - 20,000 Hz)
Frequency Response	10 - 50,000 Hz +0, -3 dB
Signal-to-Noise Ratio	Better than 80 dB (A-WTD, input shorted)
Channel Separation	Better than 60 dB (1 kHz, input shorted)
Tone Controls	
Bass	20 Hz ±10 dB
Treble	20 kHz ±10 dB
Loudness	20 Hz +10 dB, 20 kHz +6 dB

Digital Audio Section

Inputs	
Optical	2 (OPTICAL1/OPTICAL2)
Coaxial	2 (COAXIAL1/COAXIAL2)
Digital Signal Supported	
Format	Dolby Digital/PCM
Quantization	16-bit/20-bit/24-bit
Sampling Frequency	32 kHz/44.1 kHz/48 kHz
Input Impedance	75 ohms
Output Level	2 V / 1 kohm (After D/A conversion, at 0 dB)
Total Harmonic Distortion	Less than 0.005 % (1 kHz, at 0 dB)
Frequency Response	10 - 20,000 Hz +0, -0.5 dB
Signal-to-Noise Ratio	Better than 90 dB
Dynamic Range	95 dB
Channel Separation	Better than 90 dB

Video Section

Inputs	
Composite Video	4 (DVD, Video, VCR 1, VCR 2), Coaxial
S-Video (Y/C)	4 (DVD, Video, VCR 1, VCR 2), S-Video jack
Outputs	
Composite Video	3 (VCR 1, VCR 2, Monitor)
S-Video (Y/C)	3 (VCR 1, VCR 2, Monitor)
Video Signal Level / Impedance	
Composite Video	1 Vp-p / 75 ohms
S-Video	1 Vp-p / 75 ohms (Y-Signal) 0.286 Vp-p / 75 ohms (C-Signal)
Frequency Response	
Composite Video	5 Hz - 10 MHz +0, -3 dB
S-Video	5 Hz - 10 MHz +0, -3 dB

Surround Section

Surround Mode	5 (Dolby Digital, Pro Logic, Natural, Hall, Stadium)
Speaker/Subwoofer Mode Settings and Signal Characteristics	
Front L/R channels	
Speaker Mode	LARGE : Full range signal SMALL : High pass filter active (fc: 80 Hz, 12 dB/oct)
Center, Rear L/R channels	
Speaker Mode	LARGE : Full range signal SMALL : High pass filter active (fc: 80 Hz, 12 dB/oct) NONE : No center speaker
Subwoofer channel	
SW Mode	YES : Low pass filter active (fc: 80 Hz, 12 dB/oct) + LFE signal (Dolby Digital) NO : No subwoofer
Channel Level Calibration Range	
Center	-10 to +10 dB
Rear L/R	-10 to +10 dB
Subwoofer	-10 to +10 dB
Delay Time Calibration Range	
Center	0 to +5 ms (Dolby Digital/Pro Logic)
Rear L/R	0 to +15 ms (Dolby Digital) +15 to +30 ms (Pro Logic)

Others

System Remote Outputs	1-1/8" stereo mini jack for controlling Nakamichi cassette decks

[Power Amplifier Section]

Outputs	5 speaker terminals (Front L/R, Center, Rear L/R)
Continuous Sine Wave Power Output	
Stereo	100 W X 2 (8 ohms, 20 - 20,000 Hz, 0.1 % THD)
Surround	80 W X 5 (8 ohms, 20 - 20,000 Hz, 0.1 % THD)
Dynamic Output Power	120 W X 5 (8 ohms)
Power Bandwidth	10 - 40,000 Hz (Half rated power, 0.1 % THD)
Total Harmonic Distortion	Less than 0.1 % (Rated power, 20 - 20,000 Hz)
Intermodulation Distortion	Less than 0.1 % (Rated power, 60 Hz : 7 kHz, 4 : 1)
Output Current Capability	20 A peak (Per channel, two channels driven)
Headphone Output	90 mW (40 ohms)

[Tuner Section]

FM Section

(All RF levels in microvolts given re 75-ohm antenna input. Modulation: Mono 100 %, Stereo Pilot: 10 %, Stereo Audio Signal: 90 %)

Frequency Range	
U.S.A./Canada	87.5 - 107.9 MHz in 200-kHz steps
Other Area	87.5 - 108.0 MHz in 50-kHz steps
IHF Usable Sensitivity	12 dBf / 2.2 μV (Mono, IHF)
50-dB Quieting Sensitivity	Mono : 17 dBf / 3.9 μV Stereo : 38.5 dBf / 46.1 μV
Signal-to-Noise Ratio	Mono : Better than 74 dB at 65 dBf Stereo : Better than 68 dB at 65 dBf
Frequency Response	30 - 15,000 Hz +1, -3 dB
Total Harmonic Distortion	Mono : Less than 0.3 % (1 kHz) Stereo : Less than 0.4 % (1 kHz)

Capture Ratio	2.0 dB
Alternate Channel Selectivity	Better than 45 dB (±400 kHz)
Stereo Separation	Better than 35 dB (100 Hz/1 kHz/10 kHz)
Spurious Response	Better than 80 dB
Image Rejection	Better than 40 dB
IF Rejection	Better than 70 dB
AM Suppression	Better than 60 dB

AM Section

(Modulation: 400 Hz, 30 %)

Frequency Range	
U.S.A./Canada	530 - 1,710 kHz in 10-kHz steps
Other Area	531 - 1,602 kHz in 9-kHz steps
Sensitivity	55 dBμ/m
Signal-to-Noise Ratio	Better than 50 dB at 90 dBμ/m
Total Harmonic Distortion	Less than 0.5 % at 90 dBμ/m
Selectivity	Better than 20 dB (±10 kHz)

[General]

Power Source	120 V AC, 60 Hz AC 110 - 120 V or AC 220 - 240 V, 50/60 Hz (According to country of sale)
Power Consumption	950 W max.
Convenience Outlets	Switched X 2, total 200 W max.
Dimensions*	430 (W) X 140 (H) X 370 (D) mm 16 - 15/16 (W) X 5 - 1/2 (H) X 14 - 9/16 (D) inches
Weight	Approx. 14 kg / 30 lbs. 13 oz.
Supplied Accessories	IEC R6 (size AA) batteries for remote control (2) AM loop antenna (1) Dipole antenna (1) Antenna adapter (1) System remote cable (1)

[Remote Control Unit]

Principle	Infrared pulse system
Power Supply	3 V DC (1.5 V X 2)
Dimensions*	67 (W) X 19 (H) X 225 (D) mm 2 - 5/8 (W) X 3/4 (H) X 8 - 7/8 (D) inches
Weight	Approx. 150 g / 5 oz. (including batteries)

* Dimensions do not include protruding parts. Height is the panel height.

Specifications and design are subject to change for further improvement without notice.

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2625-
1875-
2075-
2079
1200
2495-
4975-
225-
2495-
756
1975
195
1625-

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Nakamichi America Corporation
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